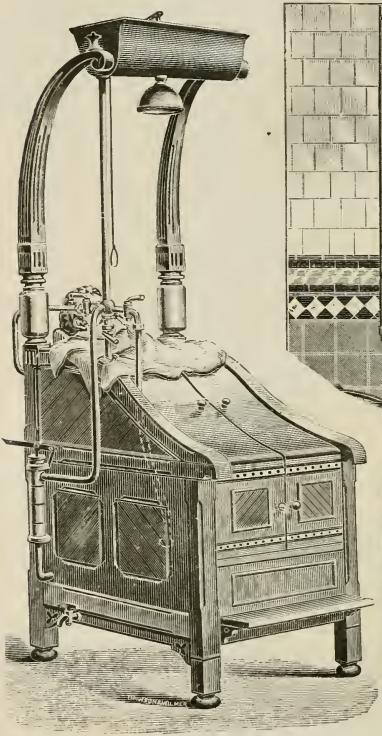
THE BEST BEVERAGE FOR CHILDREN

CADBURY'S COCOA is closely allied to milk in the large proportion of flesh-forming & strength-sustaining elements that it contains. It is prepared on the principle of excluding the super-abundance of fatty indigestible matter with which Cocoa abounds, supplying a refined thin infusion of absolutely pure Cocoa, exhilarating and refreshing, for Breakfast, Luncheon, Tea or Supper—giving staying power and imparting new life and vigour to growing Children and those of delicate constitutions.

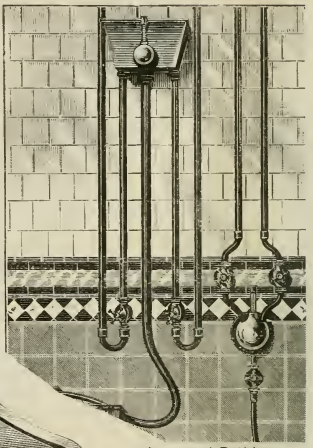
CADBURY'S COCOA

ABSOLUTELY PURE, therefore BEST.

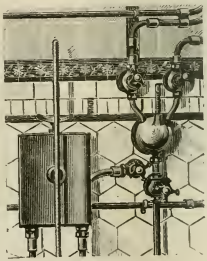
LLEWELLINS & JAMES, Castle Green, BRISTOL.



Portable Vapour Bath.



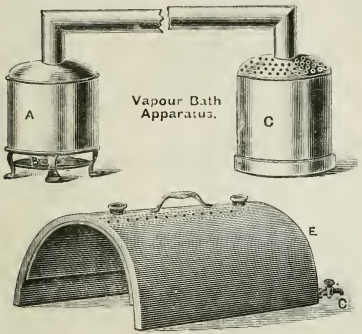
Improved Bathing Appliances.



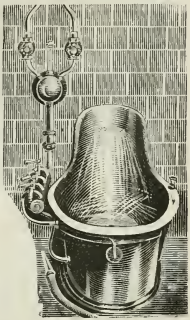
Spine Bath.

BATH APPLIANCES OF EVERY DESCRIPTION MADE TO ORDER.

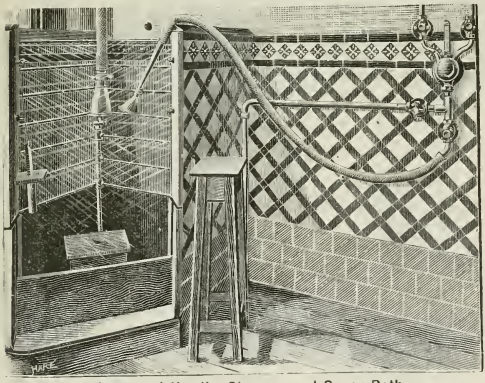
LLEWELLINS & JAMES, Castle Green, BRISTOL.



Patent Vaporarium.



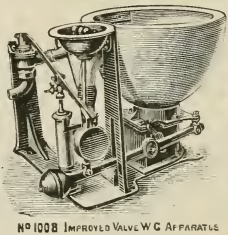
Scotch Needle Bath.



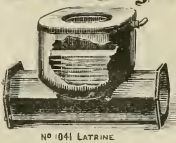
Improved Needle, Shower, and Spray Bath.

MANUFACTURERS OF ALL KINDS OF COPPER WORK.

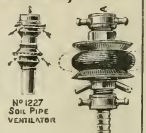
LLEWELLINS & JAMES,



Nº 1008 Improved Valve W.C Apparatus

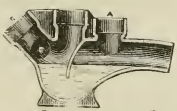


Nº 1041 Latrine

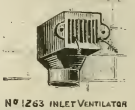


Nº 1227 Soil Pipe Ventilator

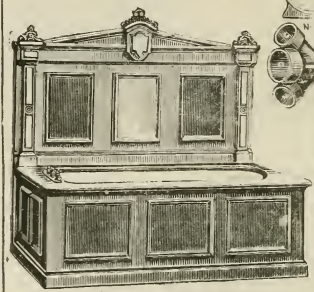
Nº 94 Drain testing Plug



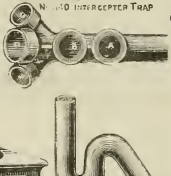
N[illegible]10 Intercepter Trap



Nº 1263 Inlet Ventilator

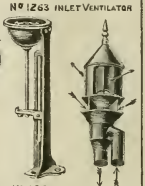


Nº 2004 "French" Bath Cabinet



Nº 981. Patent Trap

Nº 980 Patent Lead Trap



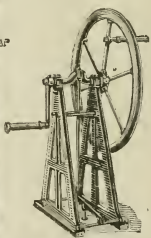
Nº 1291 Gloss-T Stay

Nº 1227 Soil Pipe Ventilator

Nº 942 Drain Testing Asphyxiator

Nº 941 Drain Testing Ferret

Nº 1027 W.C. Apparatus



Nº 5273 Pumping Frame

Sanitary Engineers.

Bristol, — Established 1735.

HARE

A. W. REID & Co.,

SANITARY ENGINEERS,

Makers of Lavatories, Urinals, Baths, Plumbers' Brasswork, Sanitary Earthenware, Fireclay Sinks, Folding Lavatories for Steamships, &c.

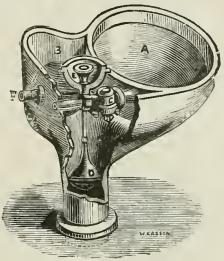
69, ST. MARY AXE, LONDON, E.C.,

SOLE MANUFACTURERS OF

PEARSON'S PATENT

TWIN-BASIN WATER CLOSET

For SIMPLICITY. For CLEANLINESS.



For SECURITY against SEWER GAS.

These Closets have been thoroughly tested by many years' use in Hospitals, Schools, Railway Stations, Hotels, Factories, Warehouses, Mansions and Cottages, with the very best results. They have been tried and approved by the highest Sanitary Authorities, by Architects, and by the Medical Profession.

Below is an extract from one of the numerous Testimonials received:—

SURVEYOR'S OFFICE, GUY'S HOSPITAL, LONDON, 10th February, 1877.

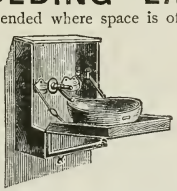
"Taken altogether, I have seen nothing to equal the Pearson's Closet, or I should not have introduced them for use in the Hospital."

(Signed) ARTHUR BILLING, *Surveyor to the Hospital.*

PATENT FOLDING LAVATORIES.

Highly recommended where space is of importance.

For CONSULTING ROOMS and LIBRARIES.



For SMOKING and BILLIARD ROOMS.

For Diagrams and List of Prices, apply to the Manufacturers as above.

Gold Medal awarded at the International Health Exhibition, London, 1884.

THE NORTH BRITISH
PLUMBING & SCIENTIFIC SANITATION CO.,
86, NEWMAN STREET, OXFORD STREET,
LONDON, W.

Patentees and Sole Manufacturers of the Scott-Moncrieff System of Cast-Iron Drainage.

THE NEWMAN CAST-IRON DOMESTIC DRAINAGE consists of socket pipes and connections (gas tight), inspecting and intercepting chambers, surface covers, gully traps, improved grease traps, and automatic flushing cisterns for hot or cold water. Complete ventilation to the system and access to every part.

The pipes vary from $\frac{5}{16}$ in. to $\frac{3}{8}$ in. in thickness, and in weight from 50 lbs. per yard for the 4-inch pipe, to 90 lbs. for the 6-inch pipe. The sockets are extra thick to allow of caulking with lead, as in street mains. Special patterns are used for the connections and bends. The whole are coated with Dr. Angus Smith's Patent Solution.

A gas-tight cover is made with plate combined, for building into brick manholes, which provide access to stoneware drains.

The gully traps are in three sections, so that rain water, sink wastes, etc., may be discharged either over or beneath the ground level as required, the trap outlet being lead caulked to the drain.

The grease traps have cleansing eyes to inlet and outlet branches, and baffler plates for intercepting the grease; also a movable dish and handle.

The flushing cisterns are almost silent in their action.

Referring to a paper, read by Mr. SCOTT-MONCRIEFF before the Society of Civil and Mechanical Engineers on the 22nd February, 1889, *The Engineer* says :—

"In the discussion which followed there was a general consensus of opinion that the principles advocated by Mr. Moncrieff were a great step in advance of the ordinary practice of house sanitation, and he received a hearty vote of thanks for his paper."

The *Railway Supplies Journal* of January 25th, 1889, says :—

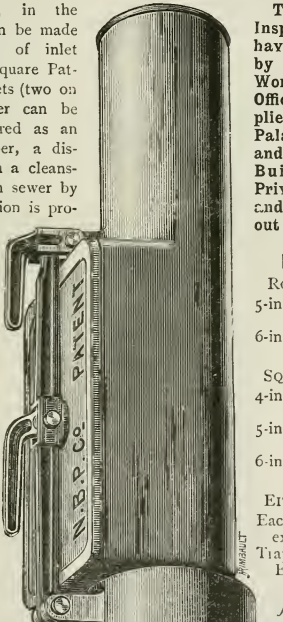
"One of the great specialities of the Company is their complete system of Cast-Iron Drainage for town houses. Of this system Mr. Scott-Moncrieff has long been an exponent and has brought the application of the material to a point greatly in advance of anything that has hitherto been carried out in this country."

THE NORTH BRITISH
PLUMBING & SCIENTIFIC SANITATION CO.,
86, Newman Street, Oxford Street, LONDON, W.

Patentees and Sole Manufacturers of the Scott-Moncrieff System of Cast-Iron Drainage.

PATENT CAST-IRON INSPECTION CHAMBER.
(SQUARE PATTERN.)

This Apparatus, in the Round Pattern, can be made with any number of inlet branches; in the Square Pattern four branch inlets (two on each side), or fewer can be attached. If required as an intercepting chamber, a disconnecting trap with a cleansing eye to the main sewer by means of a Y junction is provided, the whole being rendered gas tight by a cast-iron cover with imperishable joint, and cam action lever. By this means an entire system of drains can be tested by hydraulic pressure, and inspected at a moment's notice by an unskilled workman. It supersedes inaccessible junction pipes on the line of drains, and is fixed to the cast-iron drain pipes by socket joints run with lead, and caulked, giving the same security as in the case of high pressure mains.



These Cast-Iron Inspection Chambers have been adopted by H.M. Office of Works, the Post Office, &c., and supplied to Kensington Palace, Clubs, Banks, and other Public Buildings; also Private Mansions and Houses throughout the country.

PRICES.

ROUND PATTERN.

5-in. Main Drain Pipe, £4 5 0

6-in. Main Drain Pipe, £4 15 0

SQUARE PATTERN.

4-in. Main Drain Pipe, £2 15 0

5-in. Main Drain Pipe, £3 5 0

6-in. Main Drain Pipe, £3 15 0

EITHER PATTERN.

Each Inlet Branch, extra - - 17/6

Trap with Cleansing Eye, extra - 18/6

Special quotations for more than four branches (two on each side).

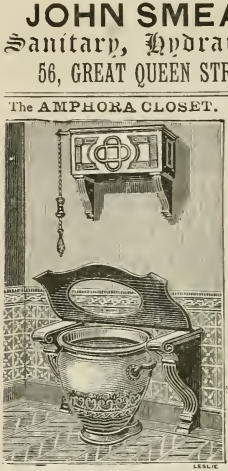
Surface Covers for general use from 28/- each.

JOHN SMEATON, SON & Co.,

Sanitary, Hydraulic and Bath Engineers,

56, GREAT QUEEN STREET, LINCOLN'S INN, LONDON, W.C.

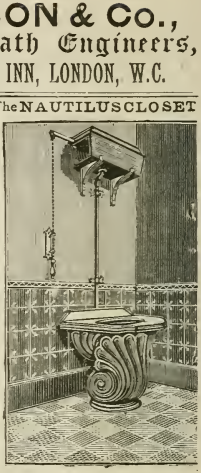
The AMPHORA CLOSET.



NOTICE.

These closets can be supplied with handsomely decorated brass cast or polished wood patent syphon cisterns, lead down service pipes, and hinged seats to enable them to be used as urinals and slop sinks. They can be had in colors at a slight extra cost. These closets are strongly recommended, as the ordinary unsightly wood casing is entirely dispensed with, they are especially adapted for W.C. rooms of small dimensions where space is an object.

The NAUTILUS CLOSET



JOHN SMEATON'S IMPERIAL NEEDLE BATH.

As Supplied To HER MAJESTY THE QUEEN, and many of the Nobility and Gentry throughout Europe and Asia.

SMEATON'S NEEDLE BATH.

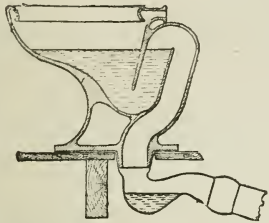
Comprising:—Spray, Shower, Douche, Ware, Ascending Sitz, Douche-and-Shower and Plunge Baths, have been fixed at most of the leading Baths and Hydropathic Establishments throughout the Country, of which the following are a few:—The Hydro and The Duke of Devonshire's Baths, Buxton, Mont Dore and Royal Hotel, Bournemouth, Spa Baths, Tunbridge Wells, Leamington Spa, Turkish Baths, Earl's Court and Prince's Club, and many other places in London and abroad; also fixed in New York, Vienna, Paris, Buenos Ayres, St. Petersburg, Russia, and other Countries. Also supplied to Her Majesty the Queen, Baron N. de Rothschild, Count J. Andrassy, Count Apponzi, D. Sassoon, Esq., D. Spartili, Esq., &c. &c.

PRICES ON APPLICATION.

Our 890 CATALOGUE containing a list of Baths and Sanitary Fittings for Hydro's and Baths with Prices, on Application.

Designs, Drawings and Estimates of Turkish, Massage, and other Baths on Application.

"DECECO" SYPHON CLOSET.



This Closet possesses considerable advantages over any other yet invented.

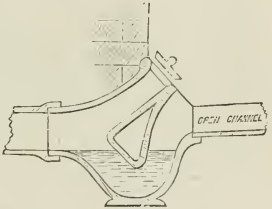
It shows a positive seal of four inches and a depth of water in the basin of seven inches.

The Trap is in sight, so that any obstruction that may at any time occur must necessarily be within view and within easy reach.

WINSER INTERCEPTING SEWER TRAP,

AS USED AT PRINCIPAL HEALTH RESORTS.

These Traps are made of the best vitrified stoneware, and have a broad flat base to assist in their fixing, and when used in conjunction with our **Patent Channel Bends** and **Iron Inspection Covers and Frames,** form the simplest and most reliable method of disconnection and means of inspection known ; giving at once **access and ventilation** to all parts of the house drain.



OVER 5000 NOW IN USE.

WINSER & Co.,

SANITARY ENGINEERS,

52, BUCKINGHAM PALACE ROAD, LONDON, S.W.

Messrs. WINSER & Co., are Patentees and Manufacturers of Approved Sanitary Appliances, including the "Winser" Intercepting Trap and Channel Pipes and Bends, Air-Tight Covers and Frames, and the "Buckingham" and "Puro" Water Closets, Stokes' Patent Gully Trap, etc.

TO BE SEEN IN OPERATION AT THEIR SHOWROOMS.

ATTENTION of the Medical Profession is particularly directed to the

SOLUBLE PILLS AND GRANULES

OF

Messrs. W. H. SCHIEFFELIN & CO.,

Who received the Highest and only Award for Pills at the International Medical Exhibition, South Kensington, 1881, numerous Gold and Silver Medals, both at Home and Abroad.

We call particular attention to the recent addition of valuable remedies to our list—Salol, Terpin Hydrat., Strophanthi, &c., &c.

These Pills and Granules are in Tasteless Transparent Coating.

Unequalled for Purity in Composition, Solubility in Coating, Uniformity in Size, Perfection in Form and Finish.

Manufactured by **W. H. SCHIEFFELIN & Co.**

NEW REMEDIES AND NEW FORMULÆ:

PIL. TERPIN HYDRAT., "W. H. S. & Co.," 2 grains each.
A New and Potent Remedy in the Treatment of Coughs, Catarrh, Bronchitis and Kindred Diseases.

PIL. STROPHANTHI TINCT. - - - 1-20 gr.=1 minim.
[DOSE—1-20 to 1-2 grain.]

PIL. STROPHANTHI TINCT. - - - ½ gr.=5 minims.
[DOSE—1-20 to 1-2 grain.]

We prepare Pills which represent 1-20 gr. and ½ gr. of the seed, equivalent to 1 minim and 5 minims of the Tincture made in accordance with Dr. Frazer's formula—viz., 1 part in 20 parts.

The pill form of Strophanthi is a more pleasant form of administering this remedy than either the *Tincture* or *Compressed Tablet, being tasteless;* it is also more conveniently carried about, the bottle, containing one hundred pills, going conveniently into the vest pocket.

PIL. SALOL, "W. H. S. & Co." - - - 2½ grs., 5 grs.

A new remedy for rheumatism and rheumatic affections, possessing all the advantages of Salicylic Acid and Salicylate of Soda, while not causing any of their objectionable effects.

PIL. HYDRARGYRUM TANNICUM OXYDULATUM, "W. H. S. & Co." (MERCURY TANNATE), 1 gr. each.

It is a greyish-green powder, containing at least 40 per cent. of Mercury, and is absorbed by the system with great rapidity, due to the fine separation of the Mercury; at the same time it is free from the disagreeable symptoms accompanying the use of other mercurial preparations.

QUINIÆ, FERRI ET ZINCI VALERIANAT.

Quiniæ Valerianat., 1 grain; Ferri Valerianat., 1 grain; Zinci Valerianat., 1 grain.
Editor "Medical Brief," St. Louis, Mo., U. S. A.:

"The family doctor only knows how widespread Melancholia is in our country. The many household cares develop this disease in nervous women, who show its first symptoms in fretfulness and worry. I have sought for a remedy for years for this malady, and have at last found it in the triple valerianates, which work like a charm."

PIL. ALOIN, STRYCHNIÆ ET BELLADONNÆ COMP.

(SCHIEFFELIN.) Aloin, 1-5 grain; Strychniæ, 1-60 grain; Ext. Belladonnæ, ⅛ grain; Ext. Cascaræ Sagradæ, ½ grain. (DOSE—1 pill.)

This pill is recommended in chronic constipation. The Aloin for its laxative effect, the Strychnia to relieve spasm of the intestines, the Belladonna because of its paralyzing influence upon the inhibitory intestinal nerves, and the Ext. Cascara Sagrada, obtained from the "Rhamnus Purshiana," in cases of habitual constipation, with hæmorrhoidal tendency, has proved extremely useful, producing a mild action of the bowels without any griping effect. (*Vide* article by Dr. Prosser James, in "Medical Press," London, April 25th, 1883.)

DAMIANÆ, NUC. VOM. ET PHOSPHORI.

Ext. Damianæ, 2 grains; Ext. Nucis Vomicæ, ⅛ grain; Phosphori, 1-100 grain.
(DOSE—1 or 2 pills.) A useful combination.

CALCII SULPHIDI PIL.—(SCHIEFFELIN.) 1-10 grain, ¼ grain, ½ grain, 1 grain.
(DOSE—1-10 to 1 grain.) This salt, which under ordinary circumstances rapidly spoils, keeps well in the soluble coated pill.

Samples and Formulæ Book of 400 various Formulæ free to Medical Men on receipt of Card by

W. E. SACKER (*Sole Agent for Great Britain and Ireland*), **79, Fenchurch St., London, E.C.**

NOTICE

TO

JOHN HADDON & CO.,

ESTABLISHED 1814.

SOLE

CONTRACTORS

FOR

ADVERTISING

IN

'HAZELL'S ANNUAL.'

3 & 4, BOUVERIE ST.,
Fleet Street,
LONDON, E.C.

DIRECTORS AND MANAGERS OF RAILWAYS, GAS WORKS, BANKS, INSURANCE OFFICES, CHARITABLE INSTITUTIONS, HOTELS, LOCAL BOARDS, and to all GENERAL ADVERTISERS.

THE CENTRAL ADVERTISING OFFICES.
(ESTABLISHED 1814.)

3 & 4, BOUVERIE STREET, FLEET STREET, LONDON, E.C.

Sole Contractors for Advertising in "HAZELL'S ANNUAL."

London Office for "*Canadian Almanack*." Guaranteed circulation, **25,000.**

London Office "*Tropical Agriculturist*." The only Tea Planters' Journal published in Ceylon.

We give FREE advice and assistance to Advertisers.

We have Accounts with LEADING South American Journals published in SPANISH.

We receive Advertisements for American and Canadian Journals.

We receive Advertisements for India and Colonial Journals.

Offer important Suggestions to parties who contemplate starting New Companies. Give Estimates, etc.

Can refer Advertisers to several Banks and many Insurance Companies and Charitable Societies whose business we have conducted.

Can refer to Solicitors and Accountants, to Auctioneers and Publishers, and to many Tradesmen.

System of Advertising New Companies has been very successful.

Have Agents in all the Chief Cities of the World.

Long experience enables us to select suitable Mediums for particular classes of Advertisements.

System of Registering our Advertisements when they appear prevents all kinds of errors.

Receive Advertisements from Clerks, Secretaries, Travellers, Governesses, and all kinds of Domestic Servants.

Receive and forward Letters in answer to Advertisements free of charge.

Receive all kinds of Scholastic Advertisements.

Require but One Copy of an Advertisement for any number of Papers.

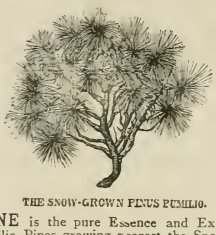
Undertake the Engraving of Blocks for Illustrated Advertisements.

Offices are on the Ground Floor in the Centre of the City.

Office Hours are from 9 to 6; Saturdays, from 9 to 2.

STERN'S PUMILINE.

For Throat and Chest Affections, Rheumatism, and Gout.



THE SNOW-GROWN PINUS PUMILIO.

The pure Essence & Extract of Pumilio Pine is manufactured ONLY by G. & G. STERN.

STERN'S PUMILINE is the pure Essence and Extract **EXCLUSIVELY OBTAINED** from Pumilio Pines growing nearest the Snow-line on the Alps, and has proved of great benefit to sufferers from **Gout, Rheumatism, Sore Throat, Bronchial and Chest Affections, and Skin Disease.**

The treatment by **Stern's Pumiline** has been widely adopted by medical men in the United Kingdom, and in offering this valuable preparation to the further notice of the Profession, we do so with full confidence that it will meet with their approval and give the satisfactory results claimed for it.

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J. MICHELL CLARKE, M.A., M.B.
SURG.-MAJOR CROMBIE, M.D.
CHARLES L. DANA, M.A., M.D.
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R. S. FANCOURT BARNES, M.D., *Vice-President British Gynæcological Society, Physician to Chelsea Hospital for Women, and to the British Lying-in Hospital, and to the Roy. Maternity Charity, London.* PERINÆORRHAPHY

HENRY DWIGHT CHAPIN, M.A., M.D., *Professor Diseases of Children, New York Post-Grad. School, and at the Women's Med. College of New York Infirmary; Phys. to Demilt Dispensary, etc.* DISEASES OF CHILDREN

J. MICHELL CLARKE, M.A., M.B. Cantab., M.R.C.P., *Assistant Physician Bristol General Hospital; Assist. Lecturer on Physiology, Bristol Medical School.* LOCOMOTOR ATAXY

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J. DUNDAS GRANT, M.A., M.D., F.R.C.S. Ed., *Surgeon Central London Throat and Ear Hospital.* DISEASES OF EAR

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W. ALLAN JAMIESON, M.D., F.R.C.P. Ed., *Extra Physician Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.* DISEASES OF SKIN

SKENE KEITH, M.B., F.R.C.S. Edin. UTERINE ELECTRO-THERAPEUTICS

W. LANG, F.R.C.S., *Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery, Middlesex Hospital, London, Surgeon Royal London Ophthalmic Hospital, Moorfields.* DISEASES OF EYE

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A. W. MAYO ROBSON, F.R.C.S., *Surgeon to Leeds Infirmary; Consulting Surgeon Batley Hospital; Lecturer on Practical and Operative Surgery Yorkshire College; Examiner in Practical Surgery Victoria University.* ABDOMINAL SURGERY

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WM. WALTER, M.A., M.D., *Physician to St. Mary's Hospital for Women and Children, Manchester.* CANCER OF THE UTERUS

LIONEL A. WEATHERLY, M.D., M.R.C.S., *Physician Bailbrook House Asylum, Bath.* INSANITY

F. J. WETHERED, M.D. Lond., M.R.C.P., *Pathologist and Registrar to the City of London Chest Hospital.* DISEASES OF LUNGS

PERCY WILDE, M.D., *Physician at Bath; Consulting Physician, formerly Medical Superintendent West of England Hydro.* THERMO-THERAPEUTICS

P. WATSON WILLIAMS, M.B. Lond., *Physician Diseases of the Throat Bristol Royal Infirmary; Demonstrator of Anatomy, Bristol School of Medicine.* DISEASES OF THROAT

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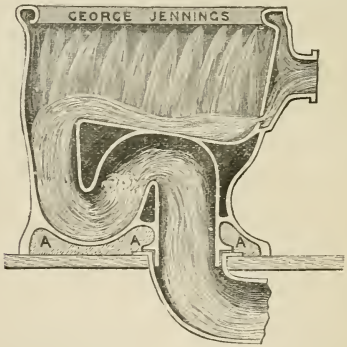

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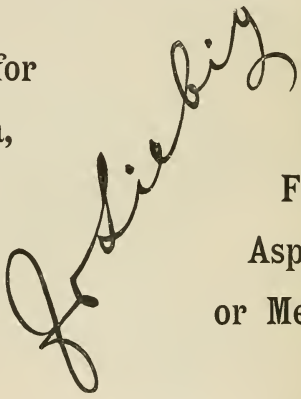

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PREFACE.

BUT little change has been made this year in the general scope and aims of the "*Medical Annual*." The Therapeutical Section, in addition to our usual "Dictionary of New Remedies," includes a contribution on Baths and their Therapeutic uses, or more correctly speaking, the therapeutics of heat as exemplified by baths and bathing; and Electro-Therapeutics has also been brought fully up to date in this part of our issue.

Sanitation is a science that is daily pressing to the front, and we trust that our article on this subject will prove of service to our readers.

It will be of interest to many to know that our new venture in the shape of the American edition was largely subscribed for in the States last year, and we have little doubt the "*Annual*" will increase in popularity there as it continues to do both in Great Britain, India, and the Colonies. We are pleased to state that the demand for the English edition having again exceeded the supply, the number printed this year is once more increased by an additional 1000 copies. This continued growth in the circulation has enabled us to give effect to one or two

hints of our subscribers in the way of improvement, which we believe will be generally acceptable. The size of the page has been enlarged, and the binding made more firm and substantial. We have also increased the number of Illustrations wherever they seemed useful in elucidating the text.

Our friends will bear with us for in this way again breaking the continuity in the series of the "*Medical Annual*": we have only done so after much pressing and consideration. We quite hope, however, that its present shape may be considered permanent, and that the change will be welcomed as an earnest of our intention to spare no trouble or expense that the "*Annual*" may long continue to occupy the position it has always held of being the premier book of its class.

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Senior Surgeon Glamorgan and Monmouthshire Infirmary, Cardiff; Surgeon Cardiff Workhouse and Hospital.

EXTRACTS FROM CONTENTS.— Appointment and Tenure of Office — Salary — Duties — Attendance at Workhouse — Receiving Wards — Nursing — Dietaries — Examination and certifying of Lunatics—Vaccination—Post mortems—Venereal cases—Lying-in Wards—Itch cases—Medical Relief book—Prescriptions and Diet cards—Register—Weekly Report—Medical Officer's House book—Annual Report—Pharmacopœa—Relations of Master and Medical Officer—Appendix—Etc., etc.,

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THE MEDICAL ANNUAL.

PART I.—THERAPEUTICS.

The Dictionary of New Remedies

AND

REVIEW OF THERAPEUTIC PROGRESS FOR THE YEAR 1889.

BY SIDNEY MARTIN, M.D. Lond., M.R.C.P.

THE multitude of new remedies yearly brought before the notice of the practising profession of medicine is extremely bewildering. There are some indeed who see in the number of new remedies recommended, and in the praise, often extravagant, lavished on them by their introducers, a ground for scepticism of all new introductions. A judicious scepticism is not to be quarrelled with : it forms the basis of all good work, both in the science of medicine and in the other experimental sciences. It is also re-assuring to think that added to this scientific scepticism, there is the fact that a new drug soon finds its proper place if it is given a fair trial. It is either discarded as being too weak in its action or as producing great and serious disturbance of the body, or it finds its place in the practitioner's *armamentarium* as a permanent and useful therapeutical agent. It is evident that no single individual can decide on the usefulness of a new remedy. The pathological processes in disease, even in an individual case, are so complicated, and the constitutional (especially the nervous) differences of individual patients so varied, that the consensus of opinion is a better criterion of the utility of a drug than even the most careful investigation of the single practitioner. A synopsis, therefore, of the results obtained from many sources is the best means of guidance in the use of remedies.

Our predecessors in the medical art were content to obtain their drugs from natural products ; they could not do otherwise, since chemistry is a growth, and fortunately now a very robust one, of recent times. While not discarding this ancient source of drugs (and we cannot afford to discard it, since the traditional use of races may point to the discovery of valuable drugs, as in the case of cocaine), we now have the benefit of the numerous products manufactured in

the chemical laboratory. From the organic compounds so formed we have obtained valuable antiseptics, important hypnotics, and antipyretics; as examples of which we may quote carbolic acid, iodoform, chloral hydrate, and antipyrin. The majority of new remedies introduced belong to these three classes of drugs. The development of the study of bacteriology, and the important relations of organisms to disease, has stimulated the search after antiseptics; and we have now drugs of this class, not only for external use (carbolic acid, iodol, etc.), but for disinfecting the alimentary canal and the bronchial and urinary passages.

With our advancing civilization and its attendant struggle for existence, nervous troubles and diseases increase. We have now numerous neurotics and sleepless and pain-suffering patients to deal with; hence, perhaps, the increasing study of hypnotic and pain-relieving remedies. Many of the antiseptics are also antipyretics, especially those belonging to the aromatic compounds; hence the study of these two classes proceeds together.

With the growth of *physiology* there has developed a new science, that of *pharmacology*, or the study of the action of drugs on the healthy organism; and although still in its infancy it will no doubt in the future develop in importance and become of great use, not only in directing the use of drugs, but in pointing out the classes of chemical compounds in which drugs are to be found, and from which a particular action in disease is to be expected.

Pathology is bound up with physiology, and consists not merely in a study of the structural changes the body undergoes in disease, but the chemical and physical changes also, and the effect of all these conditions on the functions of the body. The study of the action of drugs on particular organs, tissues and cells of the body would *a priori* lead to the better understanding of the administration of drugs in disease. Thus pharmacology is beginning to be considered a precursor of therapeutics, and is clearly linked with physiology on the one hand and pathology on the other.

Until pharmacology, however, develops, the treatment of disease must be largely empirical, a kind of "clever guessing" perhaps. The progress of science, however, bids us hope that "clever guessing" may develop into "clever knowing."

Into the relationship between chemical constitution and physiological action, this is not the place to enter. It formed the subject of Dr. Lauder Brunton's Croonian Lectures this year before the Royal College of Physicians. To these lectures (published in full in the "British Medical Journal") we would refer for further information.

The following table by Mr. A. P. Smith ("Pharm. Record," April 1, 1889,) may be found useful.

The Identification of certain New Remedies—The new remedies antipyrin, antifebrin, phenacetin, salol, sulphonal, and urethan, when compressed into tabloids, cannot, on account of their similarity of form and colour, easily be distinguished from one another by simple inspection.

One 5-gr. tabloid + 5j HNO_3.			Diluted with 5ss water.
	Cold.	Hot.	
Antipyrin.....	Liquid turns yellowish	Violent action: tabloid turns deep red and dissolves to red liquid	Turbid purple liquid; deposits on standing
Antifebrin	Nil	Violent action; liquid turns orange	Yellow orange solution, growing turbid as it cools
Phenacetin	Tabloid and liquid both turn yellow	Violent action; yellow liquid; on cooling becomes solid by separation of crystals of trinitrophenol	Partial solution of crystals
Salol	Very faint violet tint; tabloid melts on slightly warming	Strong action; orange liquid; crystals separate on cooling and float to surface.	Pale yellow liquid: white floating crystalline mass
Sulphonal.....	Liquid slightly yellow	Tabloid dissolves to a clear yellow solution	Colourless; deposits white crystals on standing
Urethan	Dissolves easily	No change	No change
Sulphonal.....	+ a drop of solution of ferric salt		=slight stain
Phenacetin			
Antipyrin.....	+ a drop of solution of ferric salt		=deep blood red colour

ACETANILID. (See "Antifebrin.")

ACETPHENETIDIN. (See "Phenacetin.")

ACTÆA RACEMOSA (Cimicifuga).

Although cimicifuga has been much vaunted for a variety of conditions its sphere of usefulness has not as yet been distinctly defined. It was at one time given extensively in acute and chronic rheumatism and in rheumatoid arthritis; but although it sometimes relieves the

pain of the chronic rheumatic diseases, it often fails or disagrees with the patient, producing nausea.

Dr. Craig Balfour recommends the drug strongly in diseases of nervous origin. In one case he describes of **Dysmenorrhœa** the drug seemed certainly effectual in relieving the severe pain, after other remedies had been used for years. "A rather nervously constituted and not very robust young lady had suffered for years from acute dysmenorrhœa. Menstruation had commenced at the age of twelve, and from the first was attended by great pain and discomfort. All the ordinary domestic remedies were tried without avail, and several physicians, both in London and elsewhere, were called in, without much relief being obtained; and, as one physician then attending the family said, after trying all the usual remedies unsuccessfully, that nothing more could be done, the patient had to resign herself to being confined to bed for a varying period each month, and to an amount of pain frequently so severe as to cause her to faint." Some years afterwards on inquiring about the symptoms, he "arrived at the conclusion that the pain was mainly neuralgic (though perhaps partly due to congestion), and therefore determined to try the actæa, which appears to have a special effect in cases where the uterus and its appendages are implicated. Ten minims of the tincture of cimicifuga were ordered to be taken night and morning for a few days before the menses were expected to appear, and to be continued during the whole period. The patient was also ordered to lie down, and to apply hot fomentations or mustard poultices to the abdomen when the pain commenced. From the very beginning of the treatment she experienced great relief, and in a short time found that a dose or two at the commencement of each period sufficed, keeping her so free from pain that only on exceptional occasions was it necessary to lie down for a few hours, so that now the patient feels a different being, and is no longer haunted by the dread of each returning period. Dr. Balfour says that this is but one of several cases, but he mentioned it on account of its severity and intractability under other treatment." ("Lancet," March 9th, 1889.)

Other observers have reported favourably of cimicifuga in dysmenorrhœa. It therefore seems worthy of trial in such cases. It is, however, an uncertain drug; but whether this uncertainty of action is due to the varying composition of the tincture usually employed, or to individual peculiarities of patients, is not at present known.

ADONIS VERNALIS, A. AESTIVALIS, ADONIDIN.

Adonis is a cardiac remedy, prescribed in much the same conditions as digitalis and strophanthus.

The *active principle* seems to be that described by Podvysotski under the name of picroadonidin. He finds by chemical analysis of the entire plant there is an amorphous substance of the nature of a glucoside (picroadonidin) which is the active principle, but that together with this there are present an orange-yellow substance (adonido-quercitin) a sugar (adonido-dulcitum), which crystallizes in beautiful prisms, a physiologically inactive glucoside, and an acid already pretty well known, and existing in aconitum napellus and some species of equisetum, and therefore called aconitic or equisetic acid, $C_6H_6O_6$. Hitherto, according to Prof. Podvysotski, all attempts to isolate the active principle of adonis vernalis have resulted in mixtures of the several substances named in various preparations, so it is not surprising that the so-called adonidins of different observers presented very dissimilar properties. Picroadonidin has an extremely bitter taste. It is easily soluble in water and alcohol, and slightly so in chloroform. It possesses all the physiological properties of the plant itself in a very high degree.

The adonis aestivalis is more common in Italy than the adonis vernalis. It was used by Borgiotti in his cases.

Dosage.—Dr. Oliver prescribed $\frac{1}{6}$th of a grain dose of adonidin, four times daily in chloroform-water. As it is, however, a very powerful drug and apt to disagree at first, it is better to begin with a dose of $\frac{1}{8}$th of a grain. Borgiotti gave the drug in the form of an infusion of the plant ; 4 to 8 grammes (1 to 2 drachms) for a dose.

Action and Therapeutics.—Like other cardiac remedies, adonis and its active principle adonidin act both on the heart and on the peripheral arteries (arterioles). Its action on the heart is to regulate and to strengthen its beat, so that the circulation of blood is made more regular and the blood pressure is increased ; to a less extent than digitalis it contracts the arterioles, thus increasing the blood pressure, and adonidin in this action seems to stand between digitalis and strophanthus. Digitalis causes a great contraction of the arterioles; strophanthus has, according to Fraser, no action on them, while adonis has a slight constricting influence.

Borgiotti found the infusion act as a *diuretic* in cardiac disease ; but only a slight diuretic effect followed the use of adonidin in Dr. Oliver's cases. The diuretic action, when present, is late in appearance, as in the case of digitalis. Marfori and Borgiotti believe that adonis is most serviceable in cases of *heart disease accompanied with marked venous engorgement, when it is desirable to regulate the work and produce prolonged diuresis.* The cases in which they employed it were chiefly **Mitral Regurgitation** and **Stenosis.**

Dr. Oliver has tested the action in cases of **Mitral** and **Aortic Regurgitation,** and in all the patients relief was given to the præcordial pain, to palpitation and dyspnœa. In seven cases in which adonidin was given there was relief of all unpleasant symptoms. Every patient who has taken it expresses himself, after a few days' trial, as feeling generally very much better. The painful throbbing of blood-vessels, headache, and profuse perspirations have, in addition to dyspnœa and præcordial pain, disappeared; and, although there has been in most of the cases a slight increase in the amount of urine, Dr. Oliver thinks that adonidin has but little diuretic action. It is a cardiac tonic, acting chiefly upon the heart, gently raising arterial tension; further, it seems to have something of the sedative action upon the heart that belladonna has. It relieves the sense of increased intra-cardiac pressure; and *the cases of aortic regurgitation in which it appears to answer best are those where the lesion is due either to traumatic rupture of the valve, or to chronic aortitis, and where it has not arisen from rheumatic endocarditis.*

In the majority of cases of cardiac disease which require treatment with the so-called "cardiac tonics," the majority of practitioners rely on digitalis as their sheet-anchor. In some cases, however, digitalis fails to give relief, especially in the milder forms of want of compensation in heart disease. The cause of failure cannot be stated with any degree of definiteness; it is not due always to inefficiency of the pharmaceutical preparation, although, especially in the case of a long-made infusion, this cause may be assigned to the failure; it may be due to the particular cardiac condition present, or to some idiosyncrasy (as we are obliged to call it) on the part of the patient. In some of these cases, when digitalis fails, strophanthus succeeds, but not always, and it is for this last fact that the study of new cardiac remedies is so important. One point in the action of all these cardiac remedies must never be forgotten in watching their effect; that beneficial results are slow in developing: the heart does not begin to beat regularly in a few hours after this commencement of treatment, the diuresis does not commence at once, but after many hours or even days. The indication, therefore, is to wait patiently for the effect. (See "Strophanthus.")

REFERENCES.—Dr. T. Oliver, "Lancet," Nov. 24th, 1888; "Therap. Gaz.," Jan. 15th, 1889; F. Borgiotti, "Deut. Med. Zeit.," Aug. 30th, 1888; Dr. Podvysotski, abstract in "Lancet," Oct. 13th, 1888.

AGARICUS ALBUS (White Agaric).

M. Hofmeister ("Gaz. Med. de Paris," Nov. 17th, 1888,) says the white agaric is an old remedy for the night-sweats of **Phthisis** dating

indeed from the end of the last century. Young ("Glas. Med. Jour.," 1882,) first used *agaricin* instead of the powdered fungus ; this is a mixed substance, the active part of which is *agaric acid.*

The *dose* of the powdered agaric is about 2 grains, of agaric acid from ¼ to ½ grain, according to Hofmeister. The acid may be given in pill form, as it is only slightly soluble in cold water, although more soluble in boiling water.

The *physiological action* of the acid which has been investigated by Hofmeister shows that, although not a violent poison, it is not an indifferent substance. Its subcutaneous injection causes great pain and local inflammation. An excessive dose by the mouth may, like the powdered fungus, produce nausea, vomiting and diarrhœa. In cold-blooded animals the general effects of agaric acid consist of an increased paralysis of the nerve-centres with reduction of the cardiac activity, and diminution of the cutaneous secretion. In warm-blooded animals the physiological effects consist in somnolence, prostration, and slowing of the respiration. In toxic doses to animals suffering from dyspnœic spasm of the respiratory muscles, a convulsive contraction of the limbs results, while sometimes general convulsions precede death. On the circulation agaric acid leads to considerable reduction of the blood pressure when administered in small doses, but to a slight increase over the normal pressure when given in larger doses, thus showing that agaric acid appears to act on vaso-motor centres and on the pneumogastric nerve. ("Therap. Gaz.," 1889.)

The acid also possesses, like atropine, the property of reducing normal perspiration ; but it does not dilate the pupil when instilled into the eye. (See also "Annual," 1888, p. 10 ; and 1889, p. 11.)

ALLYL TRIBROMIDE ($C_3H_5Br_3$).

This liquid, which becomes solid above the freezing point of water, has been recommended in doses of 5 minims, as a remedy in **Whooping Cough, Hysteria** and **Asthma.** No great efficacy is, however, ascribed to it. (See "Pharm. Post," Dec. 2nd, 1888.)

AMMONIA.

Ammonia was shown by Richardson to possess antiseptic properties ; blood, milk, fish, etc., exposed to its influence were prevented for a long time from undergoing decomposition. Ammonia, as is well known, is one of the products of putrefactive decomposition of animal and vegetable tissues; so that it was *a priori* thought improbable that it could act as an antiseptic. But it is now an established fact that the products of fermentation or septic change, on accumulation,

"choke" the activity of ferments and the development of organisms; it is therefore not improbable that some of these products should possess antiseptic properties. As regards ammonia, Gottbrecht in his recent experiments, completely confirms Richardson in his statement as to an antiseptic action. A one per cent. solution delayed the putrefaction of animal tissues for three days, while a ten per cent. solution delayed it for sixty days. In an atmosphere saturated with ammonium carbonate, meat could be kept sweet for nearly six months. Whether ammonia will have any practical application for the preservation of foods remains yet to be seen. It may be useful, however, to bear its properties in mind, if no other preserving antiseptic is at hand.

REFERENCE.—Gottbrecht, "Archiv. für Exper. Path u. Pharmak.," p. 389, April, 1889.

ANILIDES.

Several aniline derivatives have been recommended as remedies; some have been found of value. Acetanilid or antifebrin, phenacetin or acetphenetidin, and methylacetanilid or exalgine are discussed elsewhere. Binet has shown that "these substances are as closely allied in their physiological as in their chemical affinities. They paralyze the motor power, arrest the heart, reduce hæmoglobin, and are eliminated through the urine after being transformed into anamido-phenol. They all reduce temperature. The different principles vary in the character of their action on the nervous centres; thus formanilid produces torpor, and in highly toxic doses fibrillary contraction; methylacetanilid produces epileptic convulsions and collapse." Binet further draws attention to the fact that "the toxicity of these substances augment with their molecular weight."

REFERENCE.—Binet, "Rev. Méd. de la Suisse Romande," April 20th, 1889.

ANTHRAROBIN.

Bronson confirms the beneficial effects observed by Dr. Behrend in the treatment of **Psoriasis** by anthrarobin inunction. Eight cases of psoriasis were so treated with excellent results; one side of the body being treated with a ten per cent. ointment of anthrarobin in vaseline, and the other side with chrysarobin. In all of them the improvement, by the end of the first week, was decided. In every case it seemed as if the improvement began a little earlier on the anthrarobin side than on the other. By the end of a month every case was apparently healed, with the exception of perhaps a slight patch here and there. In all the cases the

psoriasis had been general. Dr. Bronson further tried the drug in **Eczema,** and in a case of seborrhœal eczema found a markedly beneficial result. In experimenting with this drug in the treatment of eczema it is necessary to proceed with caution, to prevent too much irritation, and if necessary to alternate the treatment with vaseline paste.

REFERENCES.—"Med. Ann.," 1889, p. 14; Dr. Bronson, "Jour. of Cut. and Gen.-Urin. Dis.," Nov. 1888.

ANTIFEBRIN (Acetanilid).

Antifebrin is a much more powerful drug than antipyrin, and therefore has not only to be given in much smaller doses, but even then with very great care. Its great drawback is undoubtedly the tendency it has of *producing cyanosis or collapse;* and in a case recorded by Dr. Meyer, of Hildesheim, these symptoms occurred in a strong girl of thirteen after two doses of about 4 grains each, taken within three-quarters of an hour. After the second dose, the child, though she lost the severe headache which had induced her to take the double quantity, became blue in the face and complained of great faintness, palpitation, and prostration. The heart's action was certainly increased, and as she lay in bed it was noticed that her legs were much colder than usual. As the acetanilid had apparently produced such undesirable symptoms, Dr. Meyer ordered that no more should be taken. However, one day when he was away the pain in the head came on so severely that the girl again disobeyed his instructions and took the remaining portion of the powder, nearly seven grains, in two doses within an hour or so of one another. Again the pain was cured, but on Dr. Meyer's return he found a considerable amount of cyanosis, which, notwithstanding his persistent use of stimulating measures, did not begin to improve for five or six hours, and did not disappear for twenty-four hours. ("Lancet," June 8th, 1889.)

Stachiewitz extols antifebrin above antipyrin as an antipyretic; and there is no doubt it is more effectual in reducing temperature. Dr. Cash sums up the advantages of antifebrin over antipyrin as follows: (1,) The smaller dose in which it is operative; (2,) The steadier and more continued action; (3,) Its comparative freedom from the danger of causing collapse; (4,) It is much cheaper, as it is purchasable in the open market, whilst antipyrin is not so. Against it we have merely its insolubility. This is readily overcome by prescribing it together with some pleasant tincture, as the tinct. aurantii.

Most practitioners who have used antifebrin extensively do not agree with the third of Dr. Cash's advantages ; there is no doubt that a great tendency to collapse follows the use of this drug.

As a *local application*, Dr. Newth ("Lancet," April 6th, 1889) has found antifebrin of benefit in relieving pain. He says : "My usual plan is to prescribe it with lanolin or vaseline in the proportion of 20 grains to the ounce, combined with other ingredients that seem applicable to special cases. In obstinate irritable ulcers it soothes the pain and subdues the inflammation. In **Psoriasis,** combined with some mercurial preparation, it acts like a charm. I have also tried it in **Erythema, Erysipelas, Eczema, Herpes, Urticaria,** and other complaints associated with considerable irritation, and have found it a most useful adjunct to suitable remedies." (See also "Annual," 1889, p. 8.)

ANTIPYRIN.

The great attention which has been given to the study of the action of antipyrin in health and disease demonstrates that it has found a place in the list of useful drugs. Introduced first as a reducer of body-temperature in febrile conditions, it has, perhaps, been found more really useful in the **Relief of Pain** chiefly functional, but also when associated with organic disease. All practitioners are agreed that in many cases of **Migraine** and ordinary **Headache** it gives certain and rapid relief : and it is also useful in the referred pains of **Aneurism,** or **Lung** and **Stomach Diseases.** In its relief of pain, due to organic disease, such as that of aneurism, malignant disease, or of locomotor ataxy, Germain Sée places antipyrin side by side with morphine, and even above it, since it does not tend to induce a habit. Subsequent observers have not completely confirmed Sée's optimisms ; and, although the pain of organic disease is often relieved by antipyrin, yet in many cases the drug fails utterly, and in others it is not tolerated. It may, on the other hand, be simply stated that there is no case of bodily pain which morphine will not relieve.

Mode of administration and incompatibility.—Antipyrin and *Salicylate of sodium*, when mixed together in powder, form an oily liquid, which, at the end of twenty-four hours, becomes a pasty alkaline mass : these drugs should not, therefore, be given together in a capsule. In solution, however, no decomposition seems to take place, so that administration of the two drugs is permissible in this form (VIGIER).

Antipyrin is incompatible with sweet spirits of nitre *(spiritus ætheris nitrosi).* "The discoverer of antipyrin, Knorr, found that nitrous acid produces with antipyrin a new compound, to which he gave the name

iso-nitroso-antipyrin, and which crystallizes in small bluish-green crystals, is sparingly soluble in water, and has the formula $C_{11}H_{11}N_3O_2$.

"The iso-nitroso-antipyrin is not produced unless the liquid to which the antipyrin is added contains free nitrous acid. Thus, potassium nitrite with antipyrin undergoes no decomposition, and the green compound is not generated, but, on the addition of a stronger acid to such a solution, nitrous acid is immediately set free and the green compound is formed" (WOOD & MARSHALL).

The spiritus ætheris nitrosi of the Pharmacopœia usually contains free nitrous acid, and, therefore, gives a green colouration with antipyrin, iso-nitroso-antipyrin being formed. This compound, under the influence of acids, develops hydrocyanic acid ; and so this poisonous gas may be developed in the stomach. The quantity produced is, however, so small that Wood & Marshall consider that no danger from it need be feared. Iso-nitroso-antipyrin is not a poisonous compound ; but although this is the case, "it should be remembered that on administering antipyrin with sweet spirits of nitre, the iso-nitroso-antipyrin may be produced, and that just as much antipyrin is rendered inert or destroyed as was required in the formation of the new compound, and thus the anticipated therapeutic effect of the quantity of antipyrin originally given is not obtained."

Stuart says that no decomposition occurs if the nitrous ether be shaken up with a little solid sodium bicarbonate, which neutralizes the nitrous acid. A better way, however, would be to use a standard solution of pure nitrite of ethyl instead of the uncertain spiritus ætheris nitrosi of the Pharmacopœia.

Antipyrin increases the solubility of quinine salts. Triulzi noticed that if 15½ grains of hydrochlorate of quinine were heated with 6 or 7½ grains of antipyrin and 32 minims of water, solution takes place at 77° to 86° F. ; with 3 to 4 grains of antipyrin, at 105° to 122°. The solutions do not deposit on cooling, and being neutral, are suitable for hypodermic injection.

Coffee, made in the ordinary way, with milk and sugar, completely covers the taste of antipyrin (BATTERBURY). Most patients, however, do not dislike the bitter taste of the drug.

The great drawback to the subcutaneous administration of antipyrin is the pain and tension experienced at the seat of injection. De Fougeray has used cocaine to relieve this pain. The plan which he employs is to half fill a hypodermic syringe with a 50 per cent. solution of antipyrin, which will amount to about 5½ grains ; then immerse the syringe into a 10 per cent. solution of cocaine, and enough of this solution should be drawn up into the syringe to make it about three-

fourths full; this will amount to about one-third grain of cocaine. The two solutions readily mix in the body of the syringe, and no decomposition occurs, since the injection is at once performed. Further, it is important to choose a part of the body where the skin is loose and abundantly supplied with cellular tissue, and the needle should be quickly and deeply inserted into the cellular tissue.

Good results have followed this mode of administration. We would, however, suggest that the dose of cocaine ($\frac{1}{3}$ grain) is much too large to employ ordinarily, as such a dose produces toxic symptoms in some patients. One-sixth of a grain would probably be found efficacious for the purpose. (See Decker, "Münch. Med. Woch.," No. 39, 1887.)

Physiological Action and Therapeutics.—A very good summary of the physiological action of antipyrin was given by Prof. Cash in his address at the British Medical Association in 1888 (*Op. cit.*).

Since that time, Batten & Bokenham have investigated the action of the drug on the **Nervous System,** chiefly with the view of finding the *rationale* of its action in migraine. According to these observers, antipyrin "acts on all parts of the nervous system—mainly on the spinal cord, but also on the brain and motor nerves.

"We have not yet found any means of absolutely satisfying ourselves as to the tracts of the spinal cord which are specially affected by antipyrin, but if it is fair to compare the symptoms produced by a drug with those, the result of disease, then we can show that the localisation of the action of antipyrin is fairly obvious.

"The symptoms in question bear a very strong resemblance to those of lateral sclerosis, and we therefore think that the action of the drug may be localised in the lateral columns of the cord. For instance, we found in guinea-pigs and a cat spastic rigidity of the hind limbs, and, in all animals experimented upon, rigidity formed a marked symptom. Further, in the first mentioned animals this symptom appeared to come on with any attempt to use the limbs, just as is the case with a patient with lateral sclerosis."

The drug also acts on the sensory nerve-endings, since it is a local anæsthetic (LAUDER BRUNTON).

The *fall of temperature* produced by antipyrin is also probably the result of an effect on the central nervous system. It is now generally admitted that all the metabolic changes in the body which produce heat are regulated by the central nervous system; perhaps by the "heat-centres" in the brain, or by those lower down in the nervous system. The results obtained from experiments with antipyrin on heat-loss cannot be better described than in Dr. Cash's words:—"Antipyrin was believed by Bettelheim to cause loss of heat

by its action upon the cutaneous circulation. The general blood-pressure he described as falling at first, but subsequently rising to a point somewhat above the normal When the sphygmometer was applied by Van Noorden above the arteries of subjects who had received a large dose of antipyrin, it was found by him that though the arterial pressure was not markedly influenced, the tension or tonus of the vessels was increased. He also observed the sweating produced by the drug and the fall of temperature, but he did not altogether unite with Bettelheim as to the manner in which this fall was occasioned ; for after he had cut out the action of secretory cutaneous nerves by atropine, he found that the fall of temperature was not arrested by suspension of diaphoresis. He pronounced, therefore, in favour of an action upon the seat of heat production, rather than upon an increased loss of heat from the surface of the body.

"Recent experiments of Sawadowski performed under the direction of Botkin in St. Petersburg, show that the theory which supports a central action of the drug is in part, at any rate, a correct one. Sawadowski recognized a rise of blood pressure equalling one-twentieth of the total when antipyrin was administered to dogs in the proportion of ·3 gramme (4½ grains) per kilogramme weight of the animals. He found that the excised heart, both of mammals and amphibians, contracted more powerfully when small doses of the drug were added to a circulating nutrient fluid. On the other hand, perfusion of a similarly-medicated fluid through the vessels of the limb caused in them a positive dilatation. On the vascular system the action of the drug appeared to be chiefly upon the heart, probably upon the excito-motor ganglia. His thermometric observations showed him that, while the peripheral or cutaneous temperature rose at first after antipyrin as a result of vascular dilatation, the internal temperature fell greatly. This fall occurred even when the animal experimented on was kept in a warm chamber or enveloped in cotton-wool. In order to localize the central effect of the drug, Sawadowski divided the cord above the atlas, and then injected antipyrin. After such a section he found that no fall of temperature was produced by antipyrin, though respiration and circulation were actively continued. Sections of the brain posterior to the corpus striatum had the same effect, but when anterior to the corpus the drug was found to preserve its action. Now the heat-regulating area described by Aronzohn, Sachs, Richet, and Ott is to a large extent located in the corpora ; and, assuming the correctness of the thermometric record, the conclusion seems justified that it is to a large extent upon this area or centre that the drug exerts its influence, and that its action is that of an anti-thermogenetic. That

the drug is greatly reduced in its activity by section of the cord at the atlas may probably be admitted, but it is doubtful whether its activity is altogether abolished by such a proceeding, as surface-cooling has been shown by the employment of Masje and Eichhorst's radiometer to take place as a result of the action of antipyrin. This radiation would still occur even after the section, and therefore a thermolytic effect would be superadded. If Sawadowski's observation is correct, —that the same section at the atlas which hinders the action of antipyrin also prevented the fever usually caused by injection of septic material into the veins—we should have one clear indication for the treatment of fevers of such origin, though their cause might be left untouched by the drug."

No great addition has been made to our knowledge of the action of antipyrin in febrile diseases in the past year. Although stated by some to be a specific for rheumatic fever, and even typhoid fever, it may be stated that the general consensus of opinion is that antipyrin is a specific for no fever; it is a simple antipyretic as far as we know, and does not cut short the course of specific fevers. Its utility is observed when it is requisite to reduce a dangerously high temperature, or to render the patient comparatively immune from the effect of prolonged fever.

Antipyrin, like antifebrin, quinine and sodium salicylate, has an *effect on nutrition*. According to Lépine and Porteret it diminishes the physiological change of glycogen into sugar in the liver and in the muscles.

The action of antipyrin on the **Excretion of Urine** is well-marked. Again, quoting from Dr. Cash's address, it is noticeable that the "nitrogenous elimination is greatly reduced; and this is not merely in conditions of disease, but it has been recorded by Jacubovitsch in the case of healthy as well as of feverish children to whom antipyrin had been given. The inorganic salts, sulphates, phosphates, etc., are markedly diminished. After discontinuance of the drug, however, all these constituents appear to be increased even relatively to the time anterior to the administration of the drug. Metabolism seems to be held in check by antipyrin, sometimes to a remarkable extent. In cases of typhoid fever, also, Riess showed by a series of very careful observations that excretion of urea is greatly diminished. Not only are the solid constituents of the urine decreased, the water is also diminished. This diminution is even greater than we should anticipate from the diaphoretic effect of the drug. In the therapeutical employment of antipyrin it is well to bear in mind that contraindications of its use may arise when renal disease coexists with the affection,

whether painful or pyretic, for which the drug is given even when the kidneys are healthy, but if it is of primary importance that their freedom of action should proceed unrestrained, the drug must be given with some hesitation. It seems not improbable that a case of death occurring after the eighth administration of a one-gramme dose, recorded by M. Hardy, may have been owing to a coexistence of extensive renal disease. Diabetes appears in no wise to contraindicate. The drug has even been employed in the treatment of this affection, and apparently with satisfactory result. In one case recorded by Gönner "a daily administration of three grammes for nine consecutive days altogether abolished the sugar from the urine." More information is requisite as to the action of antipyrin in diabetes. It is worthy of remark, however, that if beneficial in removing sugar from the urine, it would have another point of resemblance to morphine.

A case is recorded by Dr. Haven Ross of the effect of antipyrin as an **Antigalactagogue**:—"On October 27th, 1888, at 9 a.m., a lady, who had taken her child (sixteen months of age) from the breast the previous evening, was experiencing much pain and discomfort from the distension of her breasts. Eighteen fluid-ounces of milk were drawn off with the breast-pump, and eight grains of antipyrin prescribed three times daily. At 3 p.m., eight fluid-ounces were drawn off with the pump; on October 28th, at 9 a.m., six fluid-ounces; at 6 p.m. of the same day, three fluid-ounces; at 9 a.m. of the 29th, two fluid-ounces; and at 6 p.m., one fluid-ounce. On the 30th, no milk was found in the breasts; and the antipyrin was discontinued. Pain and discomfort disappeared after the first dose of the drug. No change was made in the previous rather generous diet. The appetite and digestion remained good."

Saleuci ("Bull. Gen. de Therap.," 1889) succeeded in repressing the mammary secretion in a primipara by means of antipyrin after having failed with numerous other agents. He gave eight grains three times daily. The secretion was much diminished on the first day, and had wholly ceased on the third day.

Wolfe extols the **Local Anæsthetic Action** of the drug. Injections near the affected joints in acute rheumatism were very serviceable. The chest pains of phthisis he saw relieved in five minutes and permanently, and the stabbing pains of pleurisy, etc., so assuaged in a few minutes that a satisfactory examination, previously interfered with by the shallow breathing, was made possible. In muscular rheumatism, in a large series of cases, the pain disappeared after a few minutes, either not to return at all or in a much more moderate degree.

We believe that it would be useful for purposes of exact diagnosis in all painful examinations—e.g., fresh fractures ; likewise in neuralgias of superficial nerves, and in asthmatic attacks the results were extremely satisfactory. In short, it is of the greatest possible use in all superficial, localized pains that one wishes to relieve quickly, for its action follows within five minutes, persists ten to twelve hours, and if then the pain returns, it is much modified. The solution is made of fifty per cent. strength in boiled distilled water, and filtered several times. A syringeful of 8 grs. is given, but oftentimes one-half the quantity is sufficient. No bad effects from the antipyrin were observed, but locally the injection causes, in all cases, some burning pain, which is often intense.—("Amer. Jour. of Med. Sci." Oct. 1888.)

Antipyrin is *contraindicated* in patients suffering from weak heart, and, according to Demme, in severe diphtheria, where there is a tendency to cardiac failure. Similarly in advanced phthisis, antipyrin must be given with care, so as to avoid the collapse which the drug sometimes produces.

References.—Vigier "Gaz. Hebdom. de Méd. et de Chir.," March 29th, 1889 ; Triulzi, Abst. in "Therap. Gaz.," July 15th, 1889 ; H. C. Wood and J. Marshall, "Therap. Gaz.," Feb. 15th, 1889 ; see also "Ibid.," Jan. 15th, 1889 ; Batterbury, "Brit. Med. Jour.," Oct. 27th, 1888 ; H. de Fougeray, Abst. in "Therap. Gaz.," Jan., 1889 ; C. Claremont, "Brit. Med. Jour.," Oct. 27th, 1888 ; R. D. Batten and T. J. Bokenham, "Ibid.," June 1st, 1889 ; Pisemsky, Abst. in "Lond. Med. Rec.," Dec. 20th, 1888 ; M. Kumagarva, Abst. in "Ibid.," Oct. 20th, 1888 ; H. Ross, "Med. News," Philad., Vol. liii., p. 645 ; T. Cash, "Brit. Med. Jour.," Oct. 25th, 1888 ; Wolfe, "Therap. Monat.," June, 1888 ; B. F. Humphreys, "Therap. Gaz.," July 15th, 1889 ; "Med. Annual," 1889, p. 14.

APOMORPHINE.

Dr. J. Brown ("Brit. Med. Jour.," March 9th, 1889) says that in cases such as **Alcoholic Intoxication,** in which rapid emesis is required to be produced, there is no drug like apomorphine hydrochlorate subcutaneously injected. The injectio apomorphine hypodermica of the B. P. is a two per cent. solution in camphor water ; the dose is 2 to 8 minims, containing $\frac{1}{25}$ to $\frac{1}{8}$ of a grain of the alkaloid. Serious symptoms sometimes follow the injection of apomorphine, the chief being general depression and inco-ordination of gait. Some part of the depression in ordinary cases is, no doubt, due to the vomiting produced by the drug and to the effect of the alcoholic condition of the patient ; but in some cases the depression is so severe that it can only be ascribed to the physiological action of the alkaloid.

Dr. Brown asks whether apomorphine is "a safe emetic." He replies almost unqualifyingly in the affirmative. The solution which he uses he prepares as follows: Apomorphinæ Hydrochlor. gr. i.; Sp. Vini Rect. ℥xx; Aquæ ℥c. Each 10 minims equals one-twelfth of a grain of apomorphine. The average interval between the hypodermic injection and the emesis is about ten minutes. As a rule, the vomiting only occurs two or three times at short intervals. The depression is but what might be expected after ordinary vomiting. He has observed no case approaching fatal or even serious collapse. Only two of the cases were adults, the others were very young children. He believes that there is no emetic so safe, certain, and quick for children. In adults ordinary emetics usually succeed; not so in children. The cases reported in which collapse occurred were adults.

ASELLINE. (See "Cod-Liver Oil.")

ATROPINE.

In medium doses, atropine or belladonna constricts the blood vessels, and then dilates them. This dilatation with large doses is primary and permanent as long as the drug acts: it is the feature of poisoning by belladonna, seen in the flushing of the face and the rosiness of the skin generally. Small doses of the alkaloid undoubtedly act as a hæmostatic in man, and have been found useful in the treatment of **Hæmorrhage** from the lungs. At present the only action of the alkaloid that we can consider as producing this effect is the constricting influence on the arteries, and as this is the result of small doses, the indication seems to be to administer these. Dr. R. A. Stirling relates a case of bleeding from the apex of the left lung, in which hypodermic injections of ergotin and other commonly used remedial measures had failed to check the hæmorrhage, which was sufficiently severe to threaten immediate death by suffocation, but in which the hypodermic injection of $\frac{1}{150}$ grain of atropine at once controlled the bleeding. During twenty-four hours the injections were repeated at intervals of every six hours; then, thinking that the stoppage might have been accidental, the doctor omitted the treatment for twelve hours, with the result of a fresh and severe attack, which was at once controlled by the renewal of the treatment. Atropine therefore seems worthy of trial in cases of **Hæmoptysis.**

Hæmostatics are more likely to succeed in the hæmoptysis of early phthisis than later in the disease, when the bleeding comes from a cavity. In the latter case the vessels are surrounded by thick fibroid tissue, and are themselves partly fibroid, or they are rudimentary

vessels with only a single layer of epithelial cells forming their walls. In both these cases the muscular tissue being deficient or absent, it is evident that a drug which acts as a hæmostatic by affecting the muscular coat (causing constriction) cannot act efficiently.

REFERENCE.—R. A. Stirling, Abst. in "Therap. Gaz.," Feb. 15th, 1889.

BISMUTH OXYIODIDES.

Dr. Woods ("Brit. Med. Journ.," April 6th, 1889) gives the following account of the oxyiodides of bismuth :—"Subnitrate of bismuth is already much used as an external application to **Wounds,** mucous surfaces, etc. ; but, having no antiseptic properties, it often requires to be combined with other substances. I wish, however, to call attention to some compounds of bismuth which have themselves a very decided antiseptic action. Two of these, which I select as most useful, are the red oxyiodide (Bi O I) and a yellow oxyiodide. The red oxyiodide (Bi O I) has been recommended by Dr. Chassaignac as a good substitute for iodoform. It is an odourless, insoluble, fine powder, of a bright copper-red colour, and has very rapid healing properties. Acids decompose it, and the comparative ease with which it gives up iodine no doubt accounts for its powerful antiseptic influence. As an ointment (1 in 10) it is useful in some **Skin Diseases** as well as for application to wounds and sores. The great advantage of the oxyiodides over other compounds of iodine consists in the fact that while they are sufficiently stable for preservation, etc., they at the same time readily give up the iodine they contain. These oxyiodides of bismuth supplement the oxyiodide of calcium (liq. calcis iodinatæ) to which I lately called attention."

BORNEOL.

Borneol camphor is obtained from the trunk of the *Dryobalanops camphora.* It is heavier than laurel camphor, sinking in water, but can be transformed into the ordinary camphor by appropriate means. Dr. Stockman describes some experiments undertaken to determine whether the exaggerated value set upon Borneo camphor by the Chinese is to be accounted for by any marked difference in action as compared with laurel camphor, or whether its high price is simply due to a superstitious belief in its supposed virtues, and to its comparative scarcity.

On frogs, borneol has an action similar to laurel camphor : the central nervous system being paralyzed, and death follows, due to paralysis of the cardiac muscle. In mammals, convulsions are produced, and there are symptoms like alcoholic intoxication, death being slow. The convulsions are due to an effect on the cerebral cortex.

Dr. Stockman has also noticed that sugar occurs in the urine in camphor-poisoning, when the convulsions have been a marked feature. ("Jour. of Phys.," vol. ix.)

BROMIDES.

Bromide of Potassium.—An interesting paper by M. Doyon ("Lyon Méd.," March 31st, 1889) deals with the portions of the body in which bromide of potassium accumulates. The drug, as is well known, is eliminated very slowly, and in the treatment of epilepsy tends to accumulate in the system, large doses having to be given for long periods.

The case (investigated by Dr. Andny) was that of a child twelve years of age, who for more than a year had been under constant treatment for epileptic attacks complicated with acute mania. For more than a year bromide of potassium was administered in doses of from 55 to even 120 grains a day. In November, 1888, the patient was taken with scarlet fever, and although this disease progressed normally from the first day of the child's entrance to the hospital, the patient was attacked with epilepsy and maniacal excitement. In the intervals of the attacks the child was greatly depressed, did not speak and would scarcely eat, and remained absolutely inert in the bed. In the fear that this state of somnolence might be due to the bromide of potassium, the remedy was suppressed, but at once the convulsions increased in violence and appeared at so greatly reduced intervals that the drug had to be again given, this time administered in doses of 60 grains. After a few doses violent cough set in, which was so severe as to threaten suffocation; the temperature became greatly elevated and death occurred without the presence of any other symptoms except some *râles* in the lungs; there was no cutaneous eruption. At the autopsy nothing peculiar could be detected with the exception that perhaps the cerebral substance appeared a little harder than is usually the case, and the lungs were congested; all the other organs appeared healthy. The attempt was then made to determine the presence and relative amounts of the bromide of potassium in the different organs of the body. In the brain 30 grains of bromide were found; in the liver 11 grains. It would thus appear to be warrantable to conclude from this analysis that the bromide of potassium tends to accumulate in the central nervous system and in the liver.

CALOMEL.

The diuretic action of calomel was brought prominently forward by Jendrassik a few years ago. Stintzing ("Fortsch. der Med.," 1888, No. 24) sums up the conclusions regarding it in the following

manner :—(1,) Its diuretic action is best seen in cardiac dropsy, whether secondary to valvular or to muscular disease. It does not act, or but imperfectly, when the cardiac inability is extreme, but then other remedies are also inoperative. (2,) Dropsy from other causes is less amenable to calomel treatment. This is the case with portal obstruction, but especially with renal dropsy. (3,) In combined renal and cardiac disease, calomel acts in proportion as the latter predominates. (4,) In diminishing cardiac dropsy, the drug acts not only by exciting diuresis, but also by increasing the flux from the intestines : the best results being obtained when diuresis predominates. If the reverse holds good, there may be loss of weight, but not much general improvement. (5,) When calomel acts as a prompt hydragogue, it acts favourably on the general condition—on appetite, sleep, and strength. (6,) In exudative processes (as pleurisy and pericarditis) calomel has no action, or only an insufficient one. (7,) Mercurialism does not occur in cases where polyuria is established ; but if there be no diuresis, then mercurialism is apt to arise. (8,) Although a more powerful diuretic than digitalis, it is not a cardiac tonic. The combination of the two drugs in cardiac dropsy is most useful. Calomel probably acts directly on the secreting structure of the kidney.

Most observers do not, however, agree with Stintzing that mercurialism does not occur when polyuria is established. In the majority of cases it seems that astringents, gargles, and chlorate of potash have to be used for the gums, and opium for the bowels.

CARBON BISULPHIDE.

Carbon bisulphide has been used as an application for ulcers, and internally in diarrhœa and typhoid fever. Some cases from a hospital in Santiago, Chili, illustrate its therapeutical action. They were acute and chronic dysentery, atonic dyspepsia, gastric ulcer, and typhoid fever. The dose given was generally about 2 ounces of a saturated solution of the bisulphide in water, mixed with half a tumbler of milk or a little syrup, taken half an hour or so before meals. This very quickly relieved the pain and tenesmus. In the typhoid case, which occurred in a child of ten (not a hospital patient), whose condition was becoming alarming, enemas of a pint of water, containing about ½ a drachm of bisulphide of carbon, were given, in addition to the internal administration of iodide of potassium and kairin. The diarrhœa diminished, the stools rapidly lost their offensive character the gurgling disappeared from the iliac region, and the patient made a good recovery. ("Lancet," March 23rd, 1889.)

CHROMIC ACID.

Chromic acid is a cheap and efficient means of checking excessive sweating. In hyperhidrosis of the feet, a 10 per cent. solution applied every three to six weeks is effectual. ("Med. Press and Circ.," Oct. 24th, 1888.)

COCA (Cocaine).

Both Mosso and Stockman have investigated the action of the alkaloids of coca, and Stockman's paper is really a monograph on the subject.

Among Mosso's results, the following may be mentioned as possessing general interest:—Cocaine acts directly on the blood-vessels and on the body-temperature. It causes a rise of temperature, which is quicker in appearance and more permanent than that produced by any other known substance. Cocaine causes death by asphyxia, the respiration being paralyzed: artificial respiration is therefore the first treatment to be adopted in severe cases of poisoning by the alkaloid. Ether and chloroform antagonize the action of cocaine, and are thus useful in cases of poisoning. Most observers are now agreed that amyl nitrite is not of much service in the majority of cases of poisoning.

Stockman's paper is almost purely pharmacological, dealing with the physiological action of cocaine, hygrine and cocaine-derivatives. At the end is a useful summary of the literature on "Coca."

REFERENCES.—"Brit. Med. Jour.," May 11th, 1889, *et seq.*; Abst. in "Ibid.," Dec. 29th, 1888.

COCOA-NUT.

Parisi (in "Schmidt's Jahr.," Dec. 15th, 1888) states that Cocoa-nut has been used in India as a **Vermifuge** for probably forty generations: its use, however, was not recognized in Europe until Parisi accidentally discovered its properties. Two hours after eating the endocarpium of the nut and drinking the juice he felt slight nausea, gastric disturbances, and slight diarrhœa. On the following morning he passed a large tænia, with the head attached. He then repeated the experiment on his patients in Athens; in six cases he noted success in producing the evacuation of the tæniæ. Cocoa-nut would certainly form a pleasant anthelmintic.

CODEINE.

Fischer considers codeine a much safer remedy than morphine, and one as reliable. He even extols it as a **Hypnotic.**

Lauder Brunton recommends codeine for painful affections of the abdominal and pelvic organs; it seems to have a specific action on the

sympathetic nervous system. For this purpose he gave the drug in affections of the pelvic and abdominal organs, and the results were extremely gratifying. In one case of perityphlitis a dose of 1 grain gave immediate relief to the pain. In a woman suffering with a painful tumour in the pelvic cavity, half a grain had the same magical effect. In one case of pain in the abdomen, due to accumulation of fæces in the bowels, codeine relieved the pain without interfering with the functions of the bowel. The drug was also found serviceable in relieving the pain of **Cancer of the Liver** and pancreas. In these cases the author gave two-thirds of a grain three times daily, in pill form, with extract of gentian. It caused no stupor, and did not interfere with digestion. He found the drug relieve the pain for months in long-standing cases of enteralgia without any anatomical cause. The dose was 1½ gr. three times daily. In cases where diarrhœa is present, as in many cases of carcinoma of the colon and rectum, morphine and opium are to be preferred to codeine, in that they influence the peristaltic action of the bowels. ("New York Med. Rec.")

The action of codeine is, however, best expressed by Prof. Fraser : it is a "weak morphine." In relieving cough, in producing sleep, in relieving pain, and in diabetes it is far inferior to morphine. By careful observation of cases of diabetes, Mitchell Bruce found that morphine was more efficacious than codeine in reducing the amount of urine passed, and also the amount of sugar ; so that morphine took less time than codeine to cause the total disappearance of sugar from the urine. Morphine also acted more promptly when given by the mouth than when given hypodermically ; in the latter case it tended also to cause drowsiness, but not when administered by the mouth. These results are abundantly confirmed by Prof. Fraser's independent observations of very carefully observed cases : so that there seems really no reason why the more expensive and less efficacious codeine should continue to be given in diabetes rather than the cheaper and more efficacious morphine. Any reader of Mitchell Bruce's and Fraser's paper cannot avoid coming to a conclusion against codeine.

REFERENCES.—Fischer, Abst. in "Thérap. Gaz.," Jan. 15th, 1889 ; Lauder Brunton, "Brit. Med. Jour." ; T. R. Fraser, "Brit. Med. Jour.," 1888 ; see also Mitchell Bruce's papers in "Practitioner," 1887.

COD-LIVER OIL (Aselline, Morrhuine).

Lefaki (Abst. in "Therap. Gaz.," July 15th, 1888) suggests the administration of cod-liver oil with equal parts of lime water. It forms a permanent saponified mixture, which is inodorous and may be flavoured with lemon syrup or vanilla. It is readily assimilated even by weak stomachs ; it may be administered even during diarrhœa ;

besides, it is combined with calcareous elements, which are likewise indicated in the affections which call for the use of the cod-liver oil.

Gautier & Mourgues (Abst. in "Pharm. Jour. and Trans.," Nov. 3rd, 1888) have obtained several bases—leucomaines—from cod-liver oil. One of these, aselline, produces symptoms of fatigue, shortness of breath, and stupor. Morrhuine formed two-thirds of the bases found in the oil, each tablespoonful of the oil containing $\frac{1}{3\cdot2}$ grain. This only increased the appetite, and was markedly diaphoretic and diuretic. These properties of cod-liver oil may, according to the author, be ascribed to the morrhuine present.

The peculiar properties of cod-liver oil have from time to time been associated with various constituents, with the bile salts, etc. The conditions in which it is prescribed are, however, those in which fatty food is deficient or not assimilated : and cod-liver oil being easily assimilated, it supplies this want. The appetite it causes may be ascribed to this action : at least it may be said that, as far as we know at present this explanation is the most rational.

CREASOTE.

Schetele says creasote hypodermically is useful as an **Antipyretic.** Almond oil is used as a vehicle, a solution being made of the strength of 20 to 30 per cent. The injection is said to be always followed by a fall of temperature in proportion to the amount of fever existing in the patient, and the injection of 1 to 1·50 grain of the solution is reported to have been repeated daily for months without disturbance of digestion or other unfavourable symptoms. The taste of the creasote is said to become perceptible in the mouth a quarter of an hour after an injection has been made.

Creasote is one of the antiseptics recommended in the treatment of **Phthisis.** It seems to have done good in some of Sommerbrodt's cases, published a few years ago. Von Driver has lately recorded the results of his trials. He gave it mixed with alcohol, and the dose was gradually increased until the maximum dose, 11¼ grains, was reached. He summarises as follows :—(1,) Creasote, as a rule, is well borne when it is begun in small doses, well diluted, and given at meal-times. It was better borne when the patients grew accustomed to its taste in mixture than in capsules. (2,) Appetite and digestion were usually favourably influenced by the drug, especially when abnormal fermentation took place in the stomach or in the intestines. Tubercular diarrhœa, however, could not be stopped with it for any length of time. (3,) An undoubted influence upon the tubercular fever the author did not observe in a single case, notwithstanding accurate measurements of the temperature were taken. (4,) Just as little influence could be

observed from the treatment on the tubercular processes of the lungs. The improvement that was observed was due entirely to a bettering of the hygienic surroundings. (5,) Admitting some exceptions, the treatment by creasote finds its indication in those cases only which have scrofula for their foundation, and are of a torpid nature. The patients affected with this form of phthisis present, in spite of a poor and perverted appetite, a fair proportion of adipose tissue, suffer very little with cough, though they may have considerable expectoration, and have very little tendency to fever and night-sweats, although the lungs may be breaking down pretty rapidly. There is marked improvement of all the symptoms in these cases when creasote was administered, and the treatment of phthisis by this agent in the future will be solely limited to this class of cases.

It is hardly necessary to point out that modern pathology does not draw any great distinction between phthisis secondary to "scrofula," and phthisis in "tubercular" patients.

REFERENCES.—Schetele, "Pharm. Post," May 26th, 1889; Von Driver, "Berl. Klin. Woch," No. 35, 1888; "New York Med. Jour.," 1888.

CREOLIN.

Creolin is an **Antiseptic,** obtained by the dry distillation of coal. It has a tarry odour and forms an alkaline emulsion with water. It was used in the lying-in hospital in Munich under Prof. Winkel, by Dr. Nimopoulos, in one hundred and forty cases, which were compared with an equal number treated by corrosive sublimate (1 in 2000). The cases treated by creolin were divided into three groups; one set was treated with ½ per cent. douches, one with 1 per cent., and one with 2 per cent. The creolin gave results fully as satisfactory as those from corrosive sublimate; it was found to be a better deodorizing agent than either carbolic acid or corrosive sublimate.

Ossovski has tried creolin injections in **Dysentery.** A ½ per cent. emulsion of the drug was used and retained for from five minutes to half an hour or longer. The injection was repeated twice, and sometimes three times, a day, and in the great majority of instances very soon produced a marked improvement in the patient's condition, the tenesmus, blood, and number of stools becoming less or disappearing altogether. In some cases the dysentery was arrested, but a catarrhal condition was left. Here other treatment had to be resorted to, as injections of acetate of lead and tannic acid, together with cinchona and sulphate of sodium. Creolin injections were in no case found to produce any undesirable symptoms, though they were employed in children of under a year old, one of whom was suffering from

cholerina, and though they were used by Dr. Kolokoloff (a colleague of Dr. Ossovski's) of a strength double as great as that mentioned above.

When first introduced, creolin was stated to be non-poisonous. This has been found to be incorrect, and Dr. Rosin has recorded a case of creolin poisoning from intra-uterine injection in a primipara. (See Abst. in "Illus. Med. News," 1888.)

Washburn has shown that it is a poisonous substance to animals: but only in very large doses; so that its use as an antiseptic is not debarred. Behring's experiments show that creolin is three or four times weaker than carbolic acid, and that it cannot be relied upon as a disinfectant.

Creolin-iodoform (1 to 2 per cent.) well rubbed up is a brownish powder of slight aromatic odour, and soluble in alcohol and ether. When suspended in water the creolin is dissolved while the iodoform remains undissolved. Dr. Jaksch states that for a month or more he has been using creolin-iodoform in only 2 per cent. mixtures in the treatment of various wounds, ulcers, and abscesses, both in the form of a powder and as iodoform gauze, and he believes that his results are even better than would follow the use of the pure iodoform. Creolin helps to deodorize the iodoform, as do thymol, naphthalin and carbolic acid.

References.—Nimopoulos, Abst. in "Braithwaite's Ret.," 1889; N. P. Ossovski, Abst. in "Lancet," May 18th, 1889; Washburn, "Guy's Hospital Rep.," 1888, and "Brit. Med. Jour.," Feb. 2nd, 1889; R. Jaksch, Abst. in "Therap. Gaz.," Nov. 15th, 1888; see also "Annual," 1889, p. 34.

ESCHCHOLTZIA CALIFORNICA.

Bardet & Adrian have extracted from this plant three products, a glucoside, an organic base, and a small quantity of morphine. Two pounds of the dried plant contain from five to six grains of morphine. The presence of morphine, which has been perfectly demonstrated by various tests, is very interesting, for it has as yet not usually been found in other classes than the papaver. Eschcholtzia is used as a *sedative* for children. Ter-Zakariant's experiments show that the alcoholic extract of the plant in small doses appears to arrest the cerebral functions.

References.—MM. Bardet & Adrian, Abst. in "Therap. Gaz.," Feb. 15th, 1889; Ter-Zakariant, "Therap. Gaz.," Nov. 15th, 1889.

EUGENOL.

Eugenol is an active principle extracted by Leubuscher from oil of cloves. It is a clear, dark yellow fluid, allied to the liquor phenols. It

appears to be the same as the drug described as eugenic acid. Eugenol is a **Local Anæsthetic,** but causes redness and irritation as well. If a drop of eugenol is instilled into the conjunctival sac of a rabbit, symptoms of irritation are first produced, the secretion of tears being increased, and the conjunctiva becoming somewhat reddened. After the first few minutes the sensitiveness of the cornea utterly disappears, while the conjunctiva is greatly depressed in sensibility, although not to the same degree as the cornea, the anæsthesia lasting for from ten to fifteen minutes. The deeper parts of the eye and the ciliary body are uninfluenced. Further experiments showed that eugenol was unsatisfactory as a local anæsthetic for operations. Mixed with 70 per cent. of lanolin, it allayed the itching of **Eczema.**

REFERENCES.—Leubuscher, "Wien. Med. Blätt.," Nov. 8th, 1889; Abst. in "Therap. Gaz.," May 15th, 1889.

EXALGINE (Ortho-methylacetanilid) $C_9H_{11}NO$.

Exalgine is introduced as an anodyne and local anæsthetic; it is closely allied to antipyrin. It is crystalline, sparingly soluble in cold water, quite soluble in hot water, and readily soluble in very dilute alcohol, or in water to which a small amount of alcohol has been added: it fuses at 101° C. As regards its physiological action, it seems closely allied to antipyrin, although its effects upon the sensorium are more marked than the latter, while it exerts a less marked action as an antipyretic. The characteristic results are said to be obtained after an administration of a dose of from 4 to 6 grains, given at once, or from 6 to 12 grains, taken in two doses in the course of twenty-four hours, the analgesic effect being claimed to be very marked in all forms of **Neuralgia,** including visceral neuralgia, even being superior to that of antipyrin. No gastro-intestinal irritation, rash, or cyanosis has been noticed after its administration, and it, therefore, would appear to be free from the disagreeable after-effects which appear in certain cases after the use of antipyrin and acetanilid. The toxic dose is stated to be 7½ grains for every two pounds of body weight, death apparently resulting from paralysis of the respiratory centre. It is noted that after the physiological effect of the drug has been developed, while painful sensations are destroyed, the tactile sense remains unaltered.

Exalgine is eliminated by the urine, upon the quantity of which it exercises a marked effect, acting like the antipyretics of the same group, diminishing the quantity of the secretion ("Nat. Drug." April 15th, 1889). In diabetes it also reduces the quantity of urine and of sugar eliminated. Like all of the derivatives of the aromatic series it is antiseptic and antipyretic, as well as analgesic, though the latter

property is the more marked and may be developed in doses less than half as great as antipyrin.

Bardet recommends the following mixture for neuralgia.

℞ Exalgine	ʒj	Distilled water, sufficient	
Rum	ʒx	to make	ʒv

Dissolve the exalgine in the alcohol and add the water.

Dose, 1 to 3 tablespoonfuls during the day.

REFERENCE.—Dujardin Beaumetz & Bardet, Abst. in "Therap. Gaz.," May 15th, 1889.

GLYCERINE.

Ullmann's article on glycerine as a **Purgative** is exhaustive. A syringeful of pure glycerine (45 minims) was administered, and the cases selected were those in which constipation had existed for at least two or three days, the maximum duration being 12 days; 226 enemata altogether were given, and the result of each enema was noted separately. The quantity of the produced dejections varied; in 31·4 per cent. the stools were copious, in 45·5 per cent. they were moderate in amount, and in 23·1 per cent. they were very scanty, containing merely the injected glycerine mixed with some mucus and a brownish fluid. In 83 per cent. the stools were hard, consisting chiefly of scybala, in 13 per cent. they were pappy and unformed, and in 4 per cent. they were of a diarrhœic nature. Subsequent constipation occurred in 39 per cent. Diarrhœa followed only in 3 per cent. Painful sensations during the stool, or immediately afterward, such as a burning in the rectum and colic, were complained of only by five patients, three of whom were suffering from acute parametritis, one from retroversion of the uterus, and one from chronic tubercular peritonitis. Borborygmi existed in 4 per cent. only. Abnormal quantities of mucus occurred in four cases. Blood in quantities sufficient to be noticeable was observed in two cases. Of the fifty-two cases in which the enemata failed, the author could find no cause for the failure in the primary disease. In all, however, he was enabled to detect by palpation an atonic condition of the rectum, or an accumulation of the fæcal mass higher up than usual. The author favours the theory that the local purgative action of glycerine is due to its power of abstracting water from the tissues, and in this way irritating the rectal mucous membrane and causing contraction of the muscles of the rectum. Enemata of glycerine are serviceable where, for any reason, a rapid evacuation of the lower part of the bowel is indicated. They are of no use when the accumulation of fæces is in the upper part of the large bowel, or in the small intestines. They are contra-indicated in ulcerative conditions of the rectum, and in painful inflammatory affections of neighbouring

parts. In habitual constipation they cannot replace dietetic regimen, massage of the bowels, and well-known aperients. Further observations are necessary to determine whether their continued use is not injurious to the rectal mucous membrane.

Glycerine suppositories, with gelatine, are now made ; but whether the gelatine interferes with the action or not is as yet uncertain.

References.—K. Ullmann, "Cent. f. die ges. Thérap." Aug. 1887 ; see "New York Med. Jour." 1888.

HELLEBOREIN.

MM. Vittovio and Elvidio have used aqueous solutions of helleborein, and instilled them under the eyelids in contact with the cornea. They thus obtained **Anæsthesia** of this membrane which lasted longer than the anæsthesia produced by cocaine. They maintain that at the same time the mobility of the eyelid was preserved, that the pupil did not dilate, and that the intraocular tension was not modified. Used in subcutaneous injections helleborein caused local anæsthesia, and simultaneously produced cardiac disturbances. From these facts we may conclude that helleborein is a local anæsthetic, which should, however, be used with great discretion. Owing to the action of helleborein on the heart, its use as a local anæsthetic is not to be recommended. (Abst. in "Braithwaite's Ret.," 1889.)

HYDRASTIS CANADENSIS.

Felsenberg ("Lancet," Mar. 16th, 1889), strongly recommends the local employment of the fluid extract of hydrastis canadensis in **Chronic Pharyngitis**, whether combined with enlargement of the tonsils or not. Having employed frequent daily swabbings out of the throat in a large number of these cases, he found that great improvement both externally and in the subjective sensations invariably followed very quickly. He suggests that similar treatment might be found beneficial in chronic inflammatory affections of other mucous membranes.

Hydrastis, when internally given, produces great contraction of the walls of the vessels and of the uterus.

HYDRO-NAPHTHOL.—$C_{10}H_7OH$.

Hydro-naphthol is soluble in water to the extent of 1 in 1100 ; acids and alkalies increase its solubility. It is soluble in alcohol in 1 in 2, and oil 1 in 20. It is an **Antiseptic**, and Dr. Edington ("Brit. Med. Jour.," 1889) has shown by his experiments that for antiseptic purposes it is, when dissolved in ordinary water, not much more than half as powerful as corrosive sublimate is when dissolved in

distilled water; but, under such circumstances as the surgeon meets with, it is much more powerful than corrosive sublimate. Further, as it is non-poisonous, a saturated watery solution of 1 in 1000 may be freely made use of. Considered from the point of view of a **Germicide,** it is seen that it is at least as powerful as corrosive sublimate for anthrax, and more so for bacillus subtilis, when the latter even is being used under conditions most advantageous to it. In making use of a watery solution of 1 in 1000, the water was always kept lukewarm. A solution of 1 in 300 in warm water possesses very great germicidal powers, and such will be found of the greatest service in washing out septic cavities and wounds.

Dr. Edington considers hydro-naphthol an ideal antiseptic.

HYDROXYLAMINE.—NH_2OH.

Hydroxylamine causes methæmoglobinuria when given to animals and a general paralysis of the nerve centres. It was recommended in **Skin Diseases** by Binz, from its external stimulating properties. It does not stain the skin or linen, and thus possesses an advantage over pyrogallic acid and chrysarobin. Eichoff found it an excellent substitute for these two substances He employed the "hydrochlorate dissolved in a mixture of equal parts of glycerine and spirits of wine in the proportion of 1 per 1000. This is applied with a brush to the affected parts of the skin, which must first be carefully washed with soap three to five times a day. In this way he has treated five cases of lupus, five of ringworm, and one of parasitic sycosis, with excellent results. These were specially remarkable in two cases of very severe lupus. Dr. Eichoff is hopeful that this remedy, which may sometimes perhaps be applied in the form of subcutaneous injections, may be found useful in psoriasis, parasitic eczema, and even in lepra and syphilis. He, however, warns those who propose to try it that it is a very powerful irritant, and that even for outward application a strength of 1 per 1000 is quite enough.

REFERENCES.—Raimondi and Bertoni, Binz, Abst. in "Brit. Med. Jour.," Nov. 17th, 1888; Eichoff, Abst. in "Lancet," Feb. 9th, 1889.

HYOSCINE.

Dr. Kny, of Strasburg, reports the results of the administration of the muriate of hyoscine in subcutaneous injections in eighty-eight different cases occurring in the Strasburg clinic for **Nervous Disease.** In 82·2 per cent. the result was successful, sleep lasting from six to eight hours and occurring within an hour after the administration of the dose. The majority of failures occurred in cases where the insomnia was not accompanied by any motor disturbances; while, on the other hand, where there were marked motor symptoms,

as in mania and paralysis, the result was the most favourable. The dose was from $\frac{1}{128}$ to $\frac{1}{64}$ gr., although sometimes the dose had to be increased on account of the patient becoming accustomed to the drug. One-twentieth of a grain a day was the largest amount ever given. Disagreeable after-effects were seldom observed, and these consisted of dryness of the throat and thirst. Heart disease does not appear to be a contra-indication for its use, since it was used in a case of aortic insufficiency with good result. Tastelessness, ready solubility, and cheapness are special recommendations for the drug. Dr. Kny gives the preference to hyoscine for a **Hypnotic** in case of great excitement; while sulphonal is preferable in cases of insomnia not so accompanied by motor disturbances. In **Paralysis Agitans** and **Multiple Sclerosis** hyoscine proved to be a palliative remedy.

Hyoscine is, however, a very powerful drug, and has to be given with extreme care. In two cases $\frac{1}{50}$ and $\frac{1}{75}$ of a grain caused *symptoms of poisoning* with recovery within a few hours. Dr. Prentiss reports a severe case of poisoning following $\frac{1}{100}$ of a gr., recovery taking place in six hours; while Dr. Carey developed alarming symptoms after taking the same dose.

The toleration of patients to other narcotics seems to have no influence on the development of poisoning by hyoscine.

REFERENCES.—Kny, "Thérap. Monat." January, 1889; Abst. in "Therap. Gaz.," Mar. 15th, 1889; S. W. Morton, "Therap. Gaz.," Feb. 15th, 1889; J. S. Gibb, "Ibid.," Feb. 15th, 1889; D. W. Prentiss, "Ibid.," June 15th, 1889; see also "Annual," 1889, p. 45.

IODOFORMUM BITUMINATUM.

The account given in the "Brit. Med. Jour.," Sept. 29th, 1888, p. 735, may be quoted regarding this new preparation. The drawbacks to iodoform are its disagreeable smell and its causing poisoning occasionally. Dr. Ehrmann, assistant to Prof. Neumann, of Vienna, after many experiments, was finally led to combine the iodoform with tar. He was led to this by the notion that the latter being an oily substance, would diminish the volatility of the iodoform, which is evidently the chief cause of the diffuse erythema caused by that substance, and also because tar often brings gangrenous and septic ulcers into a healthy condition. After many experiments, Dr. Ehrmann finally succeeded in making a preparation in which the particles of tar and iodoform are so closely mixed that only hyaline plates can be discovered under the microscope; the characteristic crystals of the iodoform cannot be distinguished at all. The preparation can be very easily pulverized, and has a spicy odour. The odour is so feeble that it is only perceptible in large quantities of the pre-

paration, and this slight scent, which is not at all disagreeable, can be disguised by adding a small quantity of styrax liquidus to the powder, and rubbing both substances together. The diseases in which Dr. Ehrmann has hitherto employed iodoform preparations are (1,) soft ulcers; (2,) as a dressing after the opening or excision of suppurating and strumous inguinal buboes; (3,) gummatous ulcers; and (4,) in ulcerations of the foot. The following is the method of application: The preparation is brushed over the part, which is then covered with a thin layer of Bruns's wadding, over which an ordinary dressing is applied. The dressing is changed every twenty-four or forty-eight hours. In soft ulcers situated over parts in which they are necessarily moistened by urine, or where the suppuration is very profuse. the dressing is changed twice a day.

KOLA NUT.

The results obtained by Surgeon Firth as to the value of the kola nut show: That it is allied in composition to cocoa, coffee and tea, but contains a relatively large amount of caffeine. The properties ordinarily assigned to kola are those of a *strong tonic and stimulant to the nervous system*, counteracting and removing the sense of exhaustion after fasting and fatigue; it has also been credited with having an antagonistic action to alcohol, and it has been said to purify water. From his observations Surgeon Firth concludes that kola is in no sense a food; that it increases the total urinary water, with a slight reduction of its total solids and a marked reduction of the extractive; that it has a peculiar stimulant action on the nervous system, temporarily strengthens the heart beat, and increases the arterial tension. In times of exertion and fasting it wards off the sense of mental and physical depression and exhaustion. As a therapeutic agent in convalescence, and as an antagonist to alcoholic sequelæ, kola has not yielded any positive results in Surgeon Firth's hands. For the purification of water it does not appear to be superior to other mucilaginous seeds, its action being purely mechanical. In this report due prominence is given to the importance of separating seeds which contain no caffeine, such as garcinia kola and sterculia cordifolia, as these would speedily discredit the employment of kola by the troops under conditions when it might possibly be of service. It appears that an infusion, from its astringent action, might be used for those suffering from **Diarrhœa.**

Many of the kola nuts obtained in the market are spurious and contain no caffeine at all. For the distinction between true and false kola, see Christy's New Commercial Plants and Drugs, No. 8. ("Pract.," 1889; "Lancet," June 18th, 1889.)

METHACETIN (Para-acetanisidin) $C_9H_{11}O_2$.

Methacetin is a recently introduced **Antipyretic**; but its value is not yet determined. It occurs in the form of a powder, formed of slightly reddish scales, without odour; slightly bitter to the taste; soluble in warm water, to a less degree in cold water; while it is very soluble in cold and warm alcohol.

It reduces the temperature and, like the other antipyretics, acts on the central nervous system. In doses of 2 to 3 grains it reduces febrile temperature in children; its action being followed by profuse perspiration. Mahnert has "employed it in three cases of pulmonary tuberculosis, one of tubercular meningitis, and one of pneumonia, the patients in all the cases being between six and thirteen years of age. In one instance it produced slight collapse (but never vomiting), ringing in the ears, vertigo, or erythema. The urine during the administration of this drug reduces the potasso-cupric test for sugar, but does not itself contain sugar, and there is no hæmoglobinuria."

REFERENCES.—F. Mahnert, "Pharm. Post," April 7th, 1889; Abst. in "Therap. Gaz.," May 15th, 1889.

MORPHINE.

Bokai recommends picrotoxin as an *antidote to morphine*. Morphine paralyzes the respiratory centre, while picrotoxin stimulates it. Morphine diminishes the blood pressure (in poisoning) and is a cerebral sedative, while picrotoxin increases the blood pressure and is a cerebral stimulant. The dose of picrotoxin is $\frac{1}{120}$ to $\frac{1}{60}$ grain in pill; or hypodermically, 2 to 4 minims of the following solution.

℞ Picrotoxin	gr. viij	Aquæ	ad. ℥iv
Acid. acet. glaciale	℥iv		

(Brunton's Pharmacology.)

REFERENCES.—Bokai, "Lancet," March 9th, 1889; see Fraser's and Bruce's papers quoted under 'Codeine.'

MYRTOL.

Myrtol, the new **Disinfectant for the Air-passages,** is best given, says Prof. Eichhorst, in gelatine capsules, each containing 0·15 gramme of myrtol. The drug has a powerful and penetrating odour, which can be detected in the breath for two days after one capsule has been taken. To obtain the deodorizing and disinfectant effects in cases of putrid bronchitis and pulmonary gangrene, 2 or 3 capsules should be taken every two hours, though the taking of so many as three capsules may cause loss of appetite. The effect is often wonderfully rapid, the bad odour disappearing from the sputa, and the sputa diminishing rapidly. Myrtol has no effect on tubercle bacilli. (Abst. in "Braithwaite's Ret.," 1889.)

NITRITES.

Spirit of nitrous ether is an uncertain preparation; it contains free nitrous acid, and as ordinarily dispensed, it speedily loses its active principle, nitrite of ethyl. Prof. Leech therefore advises a 2 or 3 per. cent. solution of nitrite of ethyl in alcohol, and considers that the introduction of such a solution into general use would be advantageous. Prof. Leech's observations as to the effect of nitrite of ethyl are worth quoting :—

"Nitrite of ethyl has pharmacological properties which render it in fitting cases of the highest therapeutic value. Like other nitrites, it causes dilatation of the vessels, and markedly decreases arterial tension. It not only relaxes the muscles of the arterioles, but also, as Prof. Fraser has shown, those of the smaller bronchial tubes; thus dilating bronchial tubes unduly narrowed by spasmodic contraction of their muscles.

"An important point to bear in mind with regard to the action of nitrite of ethyl is the fact that its influence is not by any means as rapid as that of nitrite of amyl when administered by inhalation, and several minutes elapse before its action on the vessels is distinctly perceptible. Marked tension-fall, indeed, is usually only observed from five to fifteen minutes after the administration of an ordinary dose, though the drug doubtless exerts some influence within a much shorter period, and its effect on the bronchial muscles sometimes becomes perceptible in less than a minute. Its physiological influence is often distinct for half an hour to an hour, and may at times be traced for a much longer period. In this respect ethyl nitrite resembles nitro-glycerine, and differs from nitrite of amyl, the action of which, at least when inhaled, rarely lasts more than two or three minutes.

"The dose required to produce the physiological effects is very small. Half a drachm of a 3 per cent. solution will usually produce dilation of the vessels, which may be distinctly shown by the lowered tension of the pulse. A much smaller amount will sometimes suffice for this effect, and I have not met with anyone whose circulation was not affected by a drachm.

"Turning now to the therapeutic uses of the solution of nitrite of ethyl, I may say that as a **Diuretic** and **Diaphoretic** it is, like other nitrites, inconstant in action.

"Doses of half a drachm to one drachm of a 3 per cent. solution often fail to affect the urine secretion. On the other hand, I have seen an increase both in renal and cardiac disease after its use, and it is worthy of trial, especially in the elderly, or where the tension is

high. In the healthy the diaphoretic action is not often observed, but under some conditions it produces an increased action of the skin, and it will probably be found of use in catarrhal conditions. I can certainly bear personal testimony to the diaphoretic influence produced on me by drachm doses of a 3 per cent. solution during an attack of febrile catarrh.

"In the treatment of ailments connected with high tension, ethyl nitrite solution is of great value. I have found it prevent the advent of **Anginal Attacks**, just as nitro-glycerine does, but like nitro-glycerine, it is not of service in removing at once anginal pain. For this purpose its action is too slow. In cases of **Dyspnœa** where with high tension the heart's power is beginning to fail, nitrite of ethyl often acts like a charm, and this is especially the case if, as not unfrequently happens, bronchial spasm complicates the cardiac condition. Not only is breathing relieved, but the pulse becomes fuller and of better character. Like nitro-glycerine, it sometimes seems to act as a cardiac stimulant, but this effect may only be due to the relief afforded to the heart by the dilatation of the vessels. Wherever with fair tension the heart's power is weak and dyspnœa is present, the administration of 30 to 90 minims of a 3 per cent. solution of nitrite of ethyl is worthy of a trial. But it is perhaps in **Asthmatic** and **Bronchitic Affections** that the nitrite will be found of the most marked benefit.

"In genuine asthma I have so far had no opportunity of trying it, but in that form which so often complicates bronchitis I have usually found 50 to 90 minims of a 3 per cent. solution of nitrite of ethyl give more or less relief. The direct effect of the drug lasts from 30 to 90 minutes, or longer, and even when this must have ceased the spasmodic trouble does not always return."

The solution of nitrite of ethyl should be added to water just before administration. For the variation in the composition of amyl nitrite, we must refer to the papers in the "Pharm. Journ." quoted.

REFERENCES.—Leech, "Med. Chron." Dec. 1888; see also papers in "Pharm. Jour." Dec. 22nd, 1888.

OXY-NAPHTHOIC ACID.

Dr. A. Schücking found oxy-naphthoic acid act very well in many cases as a *substitute for iodoform*, having a great advantage over the latter in being almost completely devoid of smell, besides which it appears to exert no specific action on the central nervous system, and is very much less costly. When dusted over sluggish granulations it acts as a mild caustic and stimulant. For washing out the vagina he employed a solution

of the combination of the acid with phosphate of sodium, the strength varying from ·3 to one per cent. Dr. Schücking does not, of course, pretend that *a*-oxynaphthoic acid is the best antiseptic for all purposes, but brings it before the profession as a valuable addition to our present category of these remedies, especially recommending the solution with phosphate of sodium. ("Lancet," June 8th, 1889.)

PARALDEHYDE.

Dr. Gordon, whose paper is chiefly pharmacological and well worthy of study, thus sums up the advantages of paraldehyde as a **Hypnotic.**

"(1,) It is not a cardiac depressant. (2,) It has no marked period of toleration, since in some cases of insomnia from overwork the drug has been taken in the same dose for some months with equally good hypnotic results. (3,) No marked craving for the drug seems to be induced by its use. (4,) It does not exercise, except in large doses, a hypnotic effect on a person not suffering from sleeplessness; hence there is no probability of its abuse. (5,) It has not a marked period of excitement before the hypnotic action takes place. (6,) Its action is speedy, patients generally falling asleep within ten minutes after its administration. (7,) The patients may be aroused while under its influence without any disagreeable or confused sensations. (8,) The sleep which it produces is tranquil and quiet, with diminished respirations; this slowing of the respirations in many pulmonary diseases is of distinct advantage. (9,) It is not liable to disorder the digestion. (10,) In many cases it is gently laxative in its action."

Dr. Rolleston describes a case of emphysema and slight bronchitis with cyanosis, in which one drachm of paraldehyde caused severe dyspnœa and collapse, followed by slight delirium. On another occasion, similar symptoms followed another dose of the drug. Paraldehyde must therefore be given with great care, if at all, when the respiratory centre is "exhausted by long-continued venosity of the blood," as in emphysema and bronchitis. Dr. Goodhart considers paraldehyde of value in the **Restlessnes** and **Cardiac Asthma** so often seen in aortic disease, and in the labouring dilated heart of chronic Bright's disease.

REFERENCES.—J. Gordon "Brit. Med. Jour." March 9th, 1889; H. D. Rolleston, "Practitioner," Nov. 1888; Dr. Goodhart, "Brit. Med. Jour." Jan. 19th, 1889.

PHENACETIN.

Dujardin-Beaumetz writes "Phenacetin, then, in febrile conditions, shows itself superior to antipyrin and acetanilid in producing

marked antithermic effects without toxic phenomena. But I would, nevertheless, say that in fevers the dose of 15 grains should never be exceeded." But it is above all as an **Analgesic** that phenacetin outrivals its predecessors. While it is quite as powerful as antipyrin and acetanilid, it does not cause the pain in the stomach, or the scarlatiniform rash of the former; nor does it give rise to the cyanosis of the latter. However prolonged may be its administration—and we have given it for months in doses of 15 to 30 grains per day—we have never observed any bad effect. We have used it for the relief of every form of pain (neuralgias, migraine, rheumatic pains, muscular rheumatism, acute articular rheumatism, the lightning pains of tabes, etc.) and always with the best results. Further, in cases of **Hysteria,** and of hysterical or neurataxic pains, phenacetin has seemed to produce better effects than the bromides; it calms the excitability of the nervous system, and in some obstinate cases of nervous insomnia it procured sleep. Phenacetin seems therefore to be not only an analgesic but a **Narcotic.**

Dr. Ott says there is hardly any neuralgia that will not be influenced by phenacetin; the best results were obtained in **Hemicrania** and **Occipital Headache.**

Dr. Müller has extensively tried the drug; as an **Antipyretic,** doses of 7 to 11 grains, rarely 15 grains, were necessary. The fall in the temperature occurred within from one to four hours, and was accompanied in most cases with perspiration, but without disagreeable sensations. During the apyrexia, which lasted from three to five hours, the patients were quite comfortable, having a better appetite and more sleep. The rise in temperature was unaccompanied by a chill. For the patient's comfort it is desirable to avoid alternate fall and rise in the temperature. If the drug is administered continuously, the temperature rises in spite of it, and after some days the system becomes habituated to the agent, and larger and larger doses are required—in fact, so large as possibly to become dangerous. He has observed marked cyanosis from 90 to 120 grains daily. Nothing more is accomplished by phenacetin than by the other antipyretics, for example, antipyrin; but it has the advantage of less unpleasant accompaniments. It is tasteless, vomiting and indigestion appear only exceptionally; ringing in the ears, or exanthematous eruptions, or signs of renal irritation were not observed. In some cases phenacetin seemed to promote diarrhœa. Like some other antipyretic agents, phenacetin possesses the property of quieting pain, and has been employed to relieve headache, except that connected with organic cerebral disease, or uræmia. For this purpose

forty-five, or even seventy-five, grains a day are required. In some neuralgic affections the pain is relieved by phenacetin, and for such purposes it seems to be in no wise inferior to antipyrin and antifebrin. In twenty-four cases of acute articular rheumatism, prompt relief from fever and the pain and swelling in the parts was obtained in fifteen cases, and disappeared wholly in from two to nine days; in four cases no improvement followed, and in six the condition was not affected. Of these six, two were of gonorrhœal origin, and two were considered cases of chronic rheumatism. Phenacetin, it would seem, deserves to be placed in the same rank with antipyrin and antifebrin as an antipyretic, and also as a means of relief in rheumatism and neuralgic pains. It is interesting to note that phenacetin possesses practically no antiseptic qualities.

Masius did not find that phenacetin was equal to antipyrin either as an analgesic or an antipyretic, for though, in the latter case, temperature is rapidly reduced the effect is of short duration.

REFERENCES.—Dujardin-Beaumetz, "Brit. Med. Jour." March 9th, 1889; F. Müller, "Thérap. Monat." Aug. 1888; Abst. in "Braithwaite's Ret." 1889; Masius, Abst. in "Lancet," March 9th, 1889; Ott, Abst. in "Brit. Med. Jour." Jan. 12th, 1889; see also Therap. Gaz." 1888, and March 15th, 1889, and July 15th, 1889.

PYRODINE (Acetyl-Phenylhydrozin)—$C_8H_{10}N_2O$.

Dreschfeld thus sums up his results in the "Medical Chronicle":—

"(1,) Pyrodine is a powerful **Antipyretic.** (2,) It reduces fever temperature quickly, and maintains the temperature at a low level for some hours. (3,) It is easily taken, and produces marked perspiration, but no nausea, vomiting, or collapse. (4,) It is especially applicable in cases of **Pneumonia, Scarlet Fever,** and **Typhus.** Given in small doses in the latter disease it enables the patient to pass through the fever period at a lower temperature range without delaying the crisis, and it seems also to shorten the period of convalescence. (5,) It is less applicable in cases of typhoid, owing to the early exhibition of toxic symptoms. (6,) It appears to act equally well in **Migraine** and **Neuralgia,** though on this point observations are as yet not numerous enough to admit of a definite opinion. (7,) Given in often-repeated doses, at short intervals, it easily shows toxic properties, and these depend on the action of the drug on the blood, producing hæmoglobinæmia. It should not be given (unless the temperature be very high) oftener than once in eighteen or twenty-four hours, and it is not safe to continue its use for more than a few days. (8,) It is found to act in cases where the other antipyretics have failed. (9,) The dose for children is 2 to 4 grains; for adults, 8 to 12 grains.

(10,) It is a much more powerful antipyretic than either antipyrin, antifebrin, or phenacetin, but it is also much more toxic than these bodies. This disadvantage is, however, reduced by the fact that it is rarely necessary to give more than one dose in twelve to eighteen hours, as the temperature is kept low for a longer period than if any of the other antipyretics are given. (11,) It reduces the pulse as well as the temperature, and often causes diuresis."

It is, however, so powerful a drug that great caution must be taken in prescribing it. It may produce jaundice, anæmia and hæmoglobinæmia. To quote the strongly worded warning of the "Lancet": "Pyrodine should never be given in larger doses than twelve grains, and only once in eighteen or twenty-four hours, and it is not safe to continue its use for more than a few days. If either of these precautions is neglected, serious or even fatal symptoms may be rapidly induced. As the use of antipyrin and other products for lowering temperature and relieving pain is becoming very extensive, we have thought it especially incumbent on us to warn the profession against the dangerous character of this latest addition to our therapeutic resources, and never to exhibit it except with the greatest caution and in the most critical cases of disease."

REFERENCES.—J. Dreschfeld, "Med. Chron." Nov. 1888; R. Wild, "Ibid."

RHUS AROMATICA (Fragrant Sumach).

Rhus Aromatica has recently come into vogue in France as a remedy for **Incontinence of Urine** in atonic states of the bladder. According to "La Thérap. Contemp." Drs. Max, Burvenich, Numa and Hamon have all tried it in this disorder, and have obtained signal successes where all other remedies have failed.

Max prepares a tincture by macerating two hundred grammes of the bark in a thousand grammes of alcohol at 80°. The dose is from 10 to 15 drops three times a day. Max claims nine cures out of eleven cases. Burvenich obtained a cure in eleven out of thirty-three cases; ten of the remaining twenty-two were considerably benefited. The good effect of the medicine is not felt till the fifth or sixth day: sometimes satisfactory results are not perceived till at the end of three or four weeks. ("Therap. Gaz." Dec. 1888.)

SACCHARIN.

Prof. Attfield sums up the advantages of saccharin. "It enables many medicinal confections, powders, and lozenges to be given in comparatively small bulk. It is able by the intensity of its sweetness to mask the nauseous taste of many drugs.

It is not liable to ferment, and hence will yield permanent preparations in place of those made with sugar, which would frequently spoil, especially if submitted to high temperature in transport. Lastly, the advantage of being 'sweet, but not harmfully sweet,' is once more urged. The slight solubility of saccharin has so often been remarked upon that good service is rendered by the description of a form of 'soluble saccharin' and by the formula for a simple solution of saccharin of the same degree of sweetness as the syrupus of the British Pharmacopœia."

The **Antiseptic** action of saccharin may also be utilized in several conditions. Thus a valuable but inexpensive dentifrice may be prepared by simply dissolving saccharin in water to the proportion of 6 per cent. A teaspoonful of this in half a pint of water forms an admirable antiseptic mouth-wash. In cases of malignant or other disease of the stomach requiring the washing out of that organ, a solution of saccharin of the strength of 2 per cent. will be found very suitable. As a quantity of twenty centigrammes, or about three grains, can be taken during the day without detriment to the digestive functions, the addition of the minute amount necessary to render mucilaginous solutions permanent (1 in 500) cannot be regarded as in any way injurious. ("Lancet," Feb. 2nd, 1889, and March 16th, 1889.)

SALICYLIC ACID and SALICYLATES.

Drs. Gibson and Felkin mention **Myosis** as resulting from the administration of salicylates; extreme contraction of the pupil was produced, although dilatation of the pupil is occasionally associated with the amblyopia frequently caused by these drugs. Dr. Caldwell gives a synopsis of the use of the various salts of salicylic acid.

Dr. Shaw records cases to show **Hæmorrhage** as an effect of the administration of salicylates. In these cases there was blood in the urine. Epistaxis is also not uncommon. The occurrence of epistaxis during salicylation is mentioned by nearly all writers on the subject, and was freely accepted at the discussion by the Clinical Society in 1881. Of one hundred and seventy-four patients treated in Guy's Hospital by these drugs, the records show that six per cent. were recorded to have had hæmorrhages. The author further affirms that, after having seen so many cases, he has never seen epistaxis occur until the deafness, headache, vomiting, tinnitus aurium, and irregular slow pulse have been well pronounced as the result of very large doses.

References.—Drs. Gibson and Felkin, "Practitioner," Jan., 1889; W. Caldwell, "Therap. Gaz.," Nov. 15th, 1889; L. E. Shaw, "Lancet," Jan. 19th, 1889.

SOZOIODOL—($C_6H_4I_2SO_4$).

Sozoiodol is a new **Antiseptic** containing in combination, iodine (54 per cent.), carbolic acid (20 per cent.), and sulphur. It is odourless. The compound, in the form of its sodium salt, has been given in doses of 22 grains thrice a day without any injurious effects manifesting themselves, and externally it is tolerated in the most concentrated state without creating artificial inflammation.

Fritsche obtained very satisfactory results with sozoiodol in **Nasal** and **Pharyngeal Disorders,** using it partly alone and partly combined with sugar of milk. Nitschmann himself has used the new remedy successfully on mucous membranes with the brush or in douche form in solutions of 5 to 7 per cent. Langgaard, the assistant of Prof. Liebreich, declared sozoiodol as a non-poisonous drug which may be applied even to the denuded skin without danger of intoxication.

In two **Burns** subsequent to an explosion, in which the injuries presented almost identical features, Nitschmann treated one case with iodoform and the other with sozoiodol, and found that the healing process under the influence of the latter application proceeded twice as fast as under the former. His formula for the sozoiodol ointment is :—

℞ Sozoiodol 5x | Lanolin 5j
M. F. Ungt. ("Therap. Gaz.")

The sodium salt is useful in acute **Conjunctivitis,** 30 grains to the ounce of water ; and the zinc salt is beneficial in **Gonorrhœa.** Sozoiodol is of course still on its trial.

REFERENCES.—"Brit. Med. Jour.," Nov. 24th, 1888 ; "Therap. Gaz.," Feb. 15th, 1889.

STROPHANTHUS and STROPHANTHIN.

Dr. Pope giving 5 minim doses of the tincture of strophanthus (1 in 20) in fourteen cases of **Cardiac Disease** obtained beneficial results from the drug. It is, like digitalis, most serviceable in **Mitral Regurgitation.** "In three cases of tricuspid insufficiency it relieved in two, the third died unrelieved. Its effect in the case of functional irregularity of the heart was very good, and it also answered well in **Renal Dropsy.** In five cases it did no good. In four it acted well after digitalis had been given with little or no effect. Altogether, it either failed, or had to be discontinued owing to vomiting, in half the cases referred to." In five cases it produced vomiting.

In the discussion on strophanthus and strophanthin at the Académie de Médecine, Sée denied the value of strophanthus in the treatment of cardiac disease, and said that the **Diuresis** it produced

was the result of the nephritis caused by the drug. He advocates the use of strophanthin in cardiac disease. Dr. Bucquoy agreed that strophanthin differed in action from strophanthus, but stated that the latter relieved dyspnœa and caused diuresis, both of which results do not follow the use of strophanthin.

There is no doubt of the general opinion that tincture of strophanthus is serviceable in cardiac disease; and many have spoken well of strophanthin also. It is possible, however, that the preparations used by all practitioners are not the same; and the contrary opinion may be thus explained.

REFERENCES.—"Lancet," Jan. 26th, 1889; "Ibid," April 13th, 1889.

STRYCHNINE.

Dr. Gibson recommends the hypodermic injection of strychnine in cases of **Narcotic Poisoning.** Strychnine is, as is well known, a stimulant of the respiratory centre, which is depressed in narcotic poisoning. After giving the ordinary treatment of narcotic poisoning (and warning against making the patient take exercise and alcohol), Dr. Gibson says: "Keeping the patient in the horizontal position, the respiration is to be carefully watched, and if there should be the least sign of irregularity, or shallowness, or inequality in the breathing, $\frac{1}{100}$th or $\frac{1}{50}$th of a grain, according to the age of the patient, of sulphate of strychnine should be administered subcutaneously, and may be repeated at intervals of an hour two, or three times. If, in spite of the strychnine, the respiration becomes very feeble or ceases entirely, artificial respiration must be commenced promptly. The most convenient method to employ is that of Sylvester; and it should be persisted in until, on the one hand, the respiration is carried on by natural means, or, on the other, the heart has for half-an-hour ceased to beat. If any one who reads these remarks should employ strychnine in the manner above described, he will be struck by the immediate improvement in the respiration which follows its administration." ("Pract.," Dec. 1888.)

SULPHONAL.

Dr. Flint states the following as the result of his trial of sulphonal. The general conclusion which may be drawn from these observations is that sulphonal, even in single doses of 20 or 30 grains, is a safe and, in the main, **Reliable Hypnotic,** free from unpleasant concomitant effects, and usually from all undesirable sequelæ. The single objectionable after-effect witnessed by the writer has been moderate somnolence on the morning following the administration of the remedy. In none of the cases has there been the slightest derange-

ment of appetite or digestion, nor have the circulation and respiration been appreciably affected at the time of awaking. The cutaneous and renal secretions have neither been increased nor diminished; nausea, vomiting, and constipation have not followed the use of the drug. Several of the cases seem to show that an increase of the original dose is often not required, and that, after a certain time, natural sleep being restored, the sulphonal may be discontinued.

The following summary of our knowledge of sulphonal may be taken from the "Brit. Med. Jour.," April, 1889. It is a somewhat insoluble substance, and was at first stated to dissolve in 100 parts of water at the ordinary temperature. A more accurate investigation carried out by Kast showed that sulphonal dissolved in the proportion of 1 in 450 parts of water, but that the solubility was greatly increased if sodium chloride were added to the liquid in the proportion of 2 per cent.; in this solution sulphonal dissolved in 1 in 250 parts. The substance is still more soluble in artificial gastric juice (1 in 200). To this insolubility of the drug is no doubt due the slow action of sulphonal; it takes as a rule over an hour to produce any effect. Kast therefore advises that the drug should be given in a solution of 1 in 200, just after the evening meal, between 7 and 8 p.m.

Most observers who have tried sulphonal speak well of it. In most cases it produces, after a period varying in length, a *tranquil natural sleep*, from which the patient awakes refreshed. In some patients it fails, and in some forms of insomnia it is absolutely useless. The cases in which it appears to be of most benefit are those in which insomnia is due to purely nervous conditions, whether functional or organic. Thus Kast found it efficient in **Neurotics**, and in the **Insomnia of Old Age**, and in **Organic Brain Disease.** Most observers confirm Kast in these statements. In an interesting article in the "Dublin Jour. of Med. Science" of last year, Dr. Conolly Norman has recorded the results of his experience with sulphonal in the treatment of patients in the Richmond Asylum. Twenty-two cases were carefully noted. The patients suffered from various forms of mental disorder, melancholia, acute and chronic, puerperal mania, acute mania, and delirium tremens. In only two cases were any bad results noticed, and in these other sedatives had failed to produce any good effect. Moreover, not only was there no gastric or intestinal disturbance, but in several cases the appetite appeared to improve during the use of sulphonal. The sleep produced appeared to be 'natural, refreshing, and undisturbed by dreams'; and, in many cases, a decided sedative effect was observed in the mental excitement. The good results obtained in these carefully recorded cases render desirable an extended trial of

the drug in similar conditions. Other practitioners have found sulphonal of no use in delirium tremens, in mania, or in any form of delirium. Matthas observed no beneficial effect in typhoid fever with high temperature, nor in pernicious anæmia; nor in sleeplessness due to pain which was not neuralgic in character. In the morphine habit, after the drug has been withdrawn, sulphonal seems to be of no use in allaying, any more than the other sedatives which have been tried—chloral, paraldehyde, and amylene hydrate. Compared with other hypnotics, sulphonal is considered by Rabbas, when given in doses of 30 to 45 grains, to be much safer and better than amylene hydrate and paraldehyde in very large doses. Rosin considers that 30 grains of sulphonal is equivalent to $\frac{1}{7}$th of a grain of morphine hypodermically injected, but that, for the relief of cough in phthisis, the same dose of morphine acts much better than 45 grains of sulphonal.

Dr. Böttrich says that 7½ grains of sulphonal will stop **Night-sweats.**

The *disadvantages* of sulphonal are, however, many. They are summed up by Dr. Crozer Griffith as follows: (1,) Its hypnotic action usually develops very slowly; (2,) This action is very liable to be prolonged throughout a greater or lesser part of the following day; (3,) It is difficult to determine the dose which may be given with effect and with comfort in each individual case, and this dose may vary at different times in the same case; (4,) The drug is liable to produce unpleasant secondary effects, which may even replace the primary hypnotic action. Chief among these are mental excitement, nausea, vomiting, dizziness, headache, languor, exhaustion, depression, and a staggering gait. These symptoms may appear either after large or after quite small doses; (5,) It very often fails to exert any hypnotic action, either in any dose whatever, or in any amount which can be given with comfort to the patient. Dr. Griffith concludes by saying: "Though I have expressed myself as in general favourably impressed with sulphonal, yet I confess to a decided preference for paraldehyde, and especially for amylene hydrate. With the latter drug my experience has been especially satisfactory, and disagreeable results following its administration are much less frequently reported in the journals than in the case of sulphonal. The objection that its taste is disagreeable is entirely removed by giving the full dose (45 minims) in 3 capsules of 15 minims each. It is especially to be preferred when a rapid hypnotic action is desired, or where there is not time to learn by repeated trial the amount of sulphonal suited to the patient in question. In cases, however, in which the stomach is

irritable, it is probable that the latter will usually be more easily tolerated."

The *staggering gait* mentioned by Dr. Griffith as one of the unpleasant effects of sulphonal is no doubt one of the most serious. It has been noticed by several observers, who have laid great stress on its occurrence. It has been so marked in some cases as to incapacitate the patient from his ordinary avocation, a serious point to consider in giving sulphonal in cases of simple insomnia.

The occasional effect of sulphonal is illustrated in the following *case of poisoning* published by Dr. Bornemann in the "Deut. Med. Zeit.," Nov. 26th, 1888. "To a physician, fifty-three years old, a victim to the morphine habit, sulphonal was given among various other hypnotics. On one occasion 60 grains were given shortly after nine o'clock in the evening, and 30 grains more an hour after midnight. Sleep did not follow promptly, but the patient shortly showed symptoms of muscular inco-ordination of a decided character. It took six days for the ataxia to subside entirely, and during a portion of that time there was great mental depression. The author infers that the action of sulphonal is not confined to the cerebral cortex, for in this case the ataxia was of central origin, inasmuch as the patient's condition was the same whether his eyes were open or closed."

REFERENCES.—W. H. Flint, "New York Med. Jour.," Dec. 15th, 1888; Leader in "Brit. Med. Jour.," April 27th, 1889; J. Crozer Griffith, "Therap. Gaz.," May 15th, 1889; "New York Med. Jour." See also "Annual," 1889, p. 69.

SULPHUR.

Sir Alfred Garrod has been accustomed for several years to administer sulphur in very small doses, and for a lengthened period of time, in the treatment of **Disorders of the Alimentary Canal** and **Liver**; also in certain **Diseases of the Joints**, especially rheumatoid arthritis (one of the articular affections called by the erroneous name of rheumatic gout); and, lastly, in **Chronic Muscular Rheumatism** and **Skin Diseases.**

The forms of sulphur which are administered are the precipitated or sublimed sulphur. Certain compounds of "sulphur, in which the sulphur is held in a weak state of combination, as the sulphides of potassium, calcium, and of hydrogen, are occasionally employed as medicinal agents, especially in the form of mineral waters, such as those of Harrogate, Strathpeffer, Moffat, Llandrindod, and Lisdunvarna, in the British Isles; and the waters of Aix-les-Bains, Challes, Aix-la-Chapelle, Bagnier de Luchon, Baden (Switzerland), and Barège on the Continent.

The confection of the Pharmacopœia was found unsuitable for continuous administration, so Sir A. Garrod has prescribed a lozenge, containing 5 grains of milk of sulphur, and 1 grain of cream of tartar. "To this lozenge I gave the name of the 'Compound Sulphur Lozenge,' and there are usually about twenty to the ounce avoirdupois. This lozenge is far from disagreeable, the cream of tartar giving it a pleasant, acidulous taste; it contains sufficient sulphur for therapeutic purposes, and my experience has shown me that patients are willing to take it for an almost indefinite period of time. We have, then, in the use of the compound sulphur lozenge a ready means of testing the value of small doses of sulphur persevered in for a long time, and I have found that in many cases one lozenge each night is quite sufficient to effect the desired end; if required, however, two may at any time be taken at bedtime, or one each night and morning."

Mr. Vaughan relates a *case of poisoning* by sulphur in a man who took two successive doses of one ounce for external hæmorrhoids. There was depression, headache, griping, and incessant vomiting with purging. The temperature was very high, 104°, and the urine and motions contained blood. In this case sulphur acted as an irritant poison.

References.—Sir A. Garrod, "Lancet," April 6th, 1889; Vaughan, "Brit. Med Jour.," Nov. 3rd, 1888.

TEREBENE.

Dr. D. M. Cammann reports a number of cases of **Bronchitis** and other lung affections treated by the use of terebene, from 15 grains to ½ drachm being given three times daily. Of these cases thirteen were of bronchitis, most with more or less pleuritic adhesions. Three were acute bronchitis, ten emphysema, two asthma and bronchitis, ten phthisis, one pleurisy, and one of the third stage of pleuro-pneumonia. Two of these—both cases of acute bronchitis—were cured, one in four and the other in eleven days. Thirty-three cases were improved, most of them markedly, but a few only to a slight degree. Five were unimproved, two of the patients being obliged to discontinue the drug after two or three days, as it produced vomiting. The shortest time the treatment was continued in any case was four days, the longest time six months. The average length of treatment was a little over twenty-six days.

The drug relieved the dyspnœa, as a rule made the expectoration more watery, and in some cases caused diuresis. In seven cases there were symptoms of an over-dose of the drug, nausea, or vomiting, or dizziness. ("New York Med. Jour.," Nov. 10th, 1888.)

THIOL.

Thiol is proposed as a *substitute for ichthyol.* It is made by heating peat-tar with sulphur, and afterwards treating with sulphuric acid and ammonia. "It is soluble in water and in a mixture of alcohol and ether, but not so soluble in either solvent singly. The sodium salt is analogous with the above, and contains 12·1 per cent. of sulphur."

"Dr. Buzzi, assistant in the Dermatological Clinic of Professor Schweninger in Berlin, uses thiol in many **Skin Affections,** such as eczema in its early stage, intertrigo, erysipelas, slight burns, pemphigus, impetigo, shingles, etc. This substance is very much the same, both in composition and in its therapeutic action, as ichthyol, being a mixture of sulphonised hydro-carbons. It exists in two forms : liquid thiol, which is a watery solution of the substance of the strength of 40 per cent., and of the consistence of a thick syrup ; also as dry thiol. Dr. Buzzi suggests that thiol powder may very probably be found useful in surgery, mixed perhaps with subnitrate of bismuth."

REFERENCES.—"Lancet," May 18th, 1889 ; "Therap. Gaz.," March 15th, 1889.

THIO-RESORCIN.

The latest *substitute for iodoform* is a combination of sulphur with resorcin, discovered by Ewer and Pick of Berlin, to which the name of thio-resorcin has been applied. It occurs as a powder, and is without smell and entirely non-poisonous. It has been used as a dusting powder, and as an ointment made up with vaseline of the strength from 10 to 20 per cent. for **Eczema, Psoriasis, Itch** and other **Skin Diseases.** It is insoluble in water, but sparingly soluble in ether and alcohol. In price it is about the same as iodoform. ("Lancet," June 8th, 1889.)

URAL.

The following account of this new **Hypnotic** may be taken from the "Therap. Gaz." ; it may be stated that the drug has not as yet been extensively enough tried to estimate its value. "Dr. Gustavo Poppi describes a product under the name of ural formed by the combination of chloral hydrate with urethan, and recommends it as an excellent hypnotic which in ordinary doses produces a physiologically quiet sleep more rapidly and of longer duration than any of the other known hypnotics. He claims that its use produces no disagreeable accidents, and in therapeutic doses no disturbance of blood pressure ; if, however, poisonous doses are given to dogs under these circumstances, reduction of blood-pressure is the principal mode through which its toxic

action is expressed. No discomfort or distress is produced on awakening from the sleep produced by ural, and Dr. Poppi states that its use may be persisted in for several days without inconvenience. He claims that he has given it in different cases of heart disease, hysteria, and other nervous affections; in all cases with the best results, even when other hypnotics had proved ineffective." ("Wien. Med. Woch.," Nov. 22nd, 1888.)

WATER.

Dr. Baruch gives an excellent summary of the scientific therapeutics of water. Dr. Dessau brings forward in his paper some points which, if not exactly novel, are yet of sufficient importance to be quoted.

Dr. S. H. Dessau expressed his opinion that water serves an excellent purpose when given as a drink to infants crying for milk before meal-time. Infants are much more likely to be overfed than underfed. Instead of feeding the infant with milk every time it cries, pure water ought to be given until sufficient time has elapsed for the next meal. Cold water in summer diarrhœa not only serves to allay heat and dryness of the mouth, but supplies a want created by the excessive intestinal discharges. He also believes in giving cold water plentifully as a drink in scarlatinal nephritis. The daily bath in infants is the best nerve tonic; it should be commenced at the fourth or six month of age. At the end of the first year the bath should be of about 70° F., and in the summer of the normal temperature of Croton water (the ordinary water supply of New York). Gently and gradually submerge the infant. He has also employed cold water in the chronic diarrhœa of infants. Hot water enemata with a small quantity of bicarbonate of sodium are valuable in the sciatica of adults believed to be due to proctitis. Water hypodermically for the relief of pain is also a procedure employed by Dr. Dessau with speedy and almost uniform success. It is, however, adapted to the relief of pain of neurotic rather than that of inflammatory origin, as in neuralgia, lumbago, and sciatica. It is injected neither cold nor warm, but at ordinary temperature.

REFERENCES.—S. Baruch, "New York Med. Jour.," Feb. 1889; S. H. Dessau, "New York Med. Rec.," March 9th, 1889.

Thermo-Therapeutics.

By PERCY WILDE, M.D.,
Phys. at Bath, Cons. Phys., formerly Med. Supt. West of Eng. Hydro.

We know that the effect of heat or cold when applied to the surface of the body is to produce changes, not only at the point of application, but reflexly upon internal organs. These changes we recognize as the result of the action of thermal stimuli upon the peripheral nerve-endings. When we employ varying degrees of temperature to produce physiological results as a part of medical treatment, we speak of the process as a "Bath." Under this term we include local applications, such as compresses and fomentations, as well as those baths in which the whole cutaneous surface is affected.

Water being one of the most convenient means for applying different temperatures to the skin, the terms Hydro-therapy and Hydro-therapeutics have been used to describe this branch of treatment; but as water is not the active therapeutic agent, but only the vehicle, and other media are frequently and preferentially employed, the term is not scientifically correct. The word Balneo-therapeutics would be free from all objection, but it has been generally used to represent "the science of the therapeutic action of mineral water." As it is necessary that we should have a name to represent a branch of therapeutics of daily increasing importance, I venture to think that the word "Thermo-therapeutics" or Thermal Treatment represents more closely the agent employed,* and its meaning may be held to include most of the therapeutic effects derivable from mineral water, so far as baths are concerned.

We do not leave out of account the action of moisture upon the skin, or the mechanical effect produced by water when forcibly impacted against it by means of douches or sprays; but we remember that the variations in such action are the result of the temperature at which the water is applied. It is this which determines its result. No mechanical effect of this kind can be produced without the addition of those which are due to thermal stimulation, therefore in practice we consider all bathing processes in reference to temperature, recognising other actions

* The Bathing Establishments of the Romans which contained Hot, Tepid and Cold baths, were called "Thermæ."

which may be produced coincidently as convenient and advantageous additions to our resources.

If, instead of studying and discussing the action of complex bathing processes in their relation to different diseases, we begin with the simple effects of thermal stimuli upon the cutaneous surface, and the laws which govern the action and reaction of nerve centres, we have at once a definite basis to work upon. If we then proceed to the changes in such actions which take place under conditions of disease or which are dependent on the constitution and temperament of the patient, we shall be able to reduce all complicated and often mysterious bathing systems to certain definite principles, and we shall find that apparently different processes (described under various names) are identical in their action, while what is apparently only a single bath will produce a wide series of different results.

The *art of bathing* may be said to consist in the use of thermal stimuli in such order and of such intensity as will produce the precise results required by the physician, and the avoidance of any subsequent reactions or effects which may not be desirable.

As the physiological effects of baths are immediate and appreciable to the patient, and the failure to produce them shows lack of knowledge or skill either on the part of the physician who prescribes the bath or the attendant who administers it; it is of great importance that the practitioner should not only clearly understand the general principles, but should also be acquainted with those technical details upon which its success—more perhaps than any other branch of therapeutics—depends.

A bath prescription may be considered as the solution of a physical problem in which, certain known factors being taken into account, we add such mechanical conditions as will give the result we require.

To illustrate this we may take the relation of thermal stimuli to the heat of the body. The known factors are :—

(1,) Brief application of cold raises the heat of the body by stimulating the sensory nerves. This action is reflex, the increased heat production being due to more rapid molecular transformation. But at the same time the contraction of the capillaries which follows diminishes the natural radiation of heat.

The prolonged application of cold (by means of the cold bath) abstracts heat by conduction, at the same time it stimulates the production of heat.

(2,) Short application of heat causes decrease in the temperature of the body by retarding heat production and by dilating the capillaries favouring radiation.

The longer application of heat raises the temperature of the body by the additional heat brought to the surface, and, where warm baths are used, by checking the normal radiation of heat.

We see, therefore, that the temperature can be lowered either by direct abstraction from the contact of bodies with the skin of a lower temperature, and which are good conductors, but that by the use of such means we must cause contraction of the capillaries which hinders its natural radiation; or we may use warmth which dilates the capillaries and permits radiation, but which will add to the heat of the body if maintained for more than a short period. We have, in addition, to remember that while cold stimulates heat production, warmth diminishes it. In prescribing a bath, the object of which is to diminish the heat of the body, we have to take into consideration these mechanical factors together with the alteration of the conditions produced by disease. Thus where there is a high degree of hyperpyrexia we should have to remember that there is generally an abolition of the reflex phenomena which we might make use of in dealing with slighter departures from the normal state, and here we should probably select the principle of "conduction"—that is, we employ cold water in such a manner as to produce the greatest loss of heat.

But in lower degrees of pyrexia where the reflex reactions are intact, say, 102° to 105° F., we should not commence with conduction, but by radiation; that is, we should use moist heat as a method of securing the most rapid dilatation of the capillaries, and either maintain this without any addition of heat except that which comes from the body, or, by the subsequent application of cold, cause rapid conduction, and then repeat the process. Personally we give preference to the first of these methods in cases where the fever is of limited duration.

We have also the condition of continued fever where neither of these processes will maintain the temperature at the normal for more than a limited period, and, providing the body heat remains within reasonable limits, it would be unwise to resort to measures which would add to the tax upon the vital powers of the patient.

But we all know from clinical experience that both comfort and benefit are derived from occasionally sponging the patient's body with cold water. Here it would appear that the short application of cold should increase the heat by stimulating heat production, and also by checking radiation, the reason it does not do so as the clinical result is that the use of the *cold water* is a very limited factor in the process. The patient being dried with a cold towel, a certain amount of moisture remains on the skin, and it is the evaporation of this moisture which is

the active agent in the cooling process. It is better practice, therefore, in such cases to employ tepid water instead of cold, and to remove only any superfluous moisture so that the skin is left damp.

This illustrates the absence of any conflict of methods in the scientific application of baths. We may reduce the temperature of the body by hot, cold, or tepid water, each acting on a different principle, and possessing special advantages according to the condition with which we have to deal.

Probably nothing has tended to contract and diminish the use of baths in medical treatment so much as the arbitrary division between cold water methods and warm bath methods in our literature on the subject. We are taught that each has its suitable class of diseases, and each its contra-indications. The physician having a case which should be benefited by the cold water method finds that the patient is chilled and depressed by the process ; or, in another case, where a course of hot baths are indicated, he finds that the beneficial effects of the bath are largely discounted by the fact that the patient is relaxed and enervated by them. Such results must tend to place the use of baths for the sick within very narrow limits, but on the other hand if we can produce precisely the action required, and insure no unpleasant or deleterious after-effects, the scope of thermal stimuli in therapeutics is a very extended one.

But by attention to some very simple principles, whether they are local or general or mineral, spring water, air, or vapour baths, we can be as sure of our results as the skilled musician is of the sounds which come from his instrument. If he took two notes, a high and a low one, and after studying the effect produced by each sounded only one or the other, he could not produce a harmony, and neither can we hope to adapt a bath to the ever-varying conditions and temperaments of patients if we limit ourselves to either the action of hot or cold baths. The ancient Romans after long conflict between the rival methods of bathing came to the conclusion that it was by the succession of hot, tepid, and cold baths that the best results could be obtained, and the only great improvement made in the practical application of baths since that period is the means we now possess of producing thermal stimuli of different intensity in rapid succession, by which the same infinite variety of effects may be produced upon the general nervous system, as by the musical instrument upon the auditory nerve.

The study of the effects of temperatures under such conditions constitutes the grammar of the art of bathing. To make this clear we may represent the intensity of various degrees of temperature by

the relative lengths of a series of vertical lines. Taking water as our medium, with the temperature of the air at 60° F., we find that if the body is immersed at temperatures varying from 40 to 105° F. there is a point between the hot and cold stages where there is neither gain nor loss of heat to the bather, and the physiological action may be said to be *nil*.

This point will vary with the individual, but may be taken as 93° F. This is called the "thermally indifferent point." All degrees of temperature above this point are stimuli of varying intensity in the hot scale, and all below it belong to the cold. We can thus construct a thermometric scale as follows :—

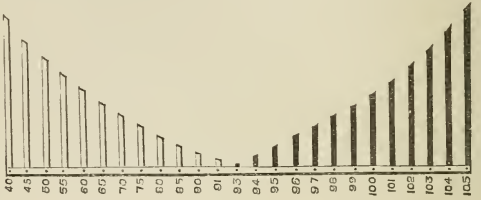

Fig. 1.

This scale represents the immediate relative effect of any single temperature upon the healthy body of a person in an atmosphere of 60° F. But it will be understood that all conditions which alter the supply of blood to the peripheral terminations of sensory nerves, diminish or increase their sensibility, and thus alter the reflex intensity of any stimulus which may be conveyed by them. The result of this is that *the intensity of any thermal stimulus of short duration is changed in value by that which immediately precedes it.*

The thermal indifferent point is constantly altering, and degrees of temperature of the cold stage in one bath belong to the hot in the next. It follows, therefore, the terms hot and cold, as registered by the thermometer, are always interchangeable by conditions depending either on the abnormal condition of the bather, or by physiological alterations artificially induced by the physician in order to obtain the result desired.

To illustrate this we may take the case of a man diving into water at 40° F., the temperature of the air being below zero. The effect on reaching the water, we speak from personal experience, is a feeling of warmth, not as a result of reaction, but because the body passes from a colder to a warmer medium. Thus momentarily we may obtain a

stimulation of warmth from the highest degree of cold on the above scale.

On the other hand we take the case of a man who has been exposed to air at a temperature of 150° F. in a Turkish bath. The air of a room at 120° F. will produce a sensation of cold. These are extreme illustrations, but they show how easily we can alter the value of thermal stimuli by changing their relation.

The practical importance of this in bathing cannot be over-estimated. The patient's skin is an organ through which we wish to transmit stimuli to the central nervous system, and most often it proves a very bad conductor on account of its enfeebled state. The local disturbances set up by the stimuli applied may cause "shock," and the proper reactions do not take place. We do not set ourselves down to adapt our bath to the condition of the skin, but we take that into account, and then place the skin in a condition to become a proper agent for the work we require of it. Then we not only secure proper reaction, but we increase the intensity of the stimuli we apply, or, as it happens in practice, we produce our results with a temperature of less intensity than we should otherwise have to employ.

If we take the case of a person in delicate health, of relaxed habit, sensitive to cold, and subject to catarrh. Our object is to produce strong stimulation of the central nervous system, increase the arterial and muscular tonicity, and encourage tissue metamorphosis. We could do this by means of a cold bathing process, but the necessity of avoiding cutaneous shock would so limit both the intensity and duration of the bath, that we should make very slow progress,—we should use instead an initial high temperature of short duration, probably 102° F.; by this, a sudden afflux of blood is brought to the skin, and the circulation both in the tissues and nerve-endings becomes as active as that of a robust man after vigorous exercise; at this point, before the action of heat has continued sufficiently long to bring about any considerable degree of relaxation of the blood vessels, the temperature is rapidly graduated to 85° F., which under the conditions, natural and artificial, present, represents a stimulus of fair intensity in the cold stage; this is continued for three to five minutes, and then we restore the circulation and rapidly dry the surface by means of a hot sheet, after which a reaction takes place of greater vigour than would have been possible if we had merely acted upon the skin in its normal condition by means of the short application of a temperature of 65° F.

We notice that some writers speak of the use of tepid baths for those patients who do not react to cold, but a little practical experience will show that tepid baths prevent reaction and are never advisable

in such cases. We employ a temperature of 85° F. in this case, not because it is "tepid," but because it is "cold" under the conditions in which we use it. We proceed with the treatment in this case by gradually lowering the temperature in the cold stage and increasing its duration, but we do not omit the hot stage; on the contrary, as the strength improves we use the hot air or vapour bath, so as to exercise the functional activity of the skin to its fullest extent.

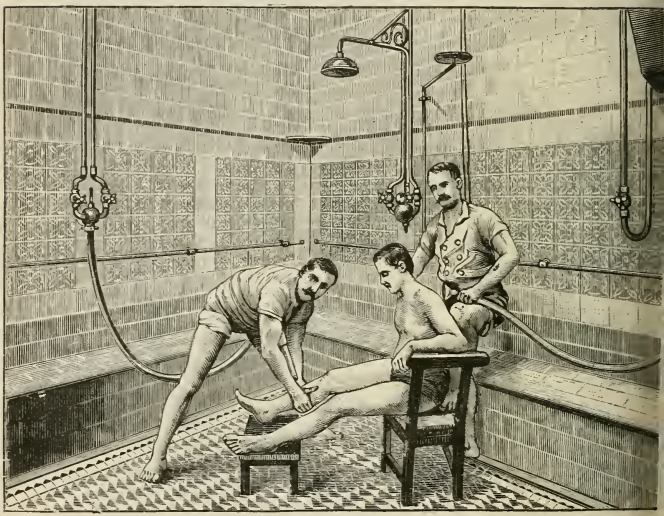

Fig. 2.

It will be noticed that in prescribing this bath three stages are indicated, the first to prepare the patient for the treatment we propose; the second which consists of the treatment proper; and the third to restore the circulation after the bath.

I think it will be found good practice to consider all baths as consisting of three stages, which we may call :—

(1,) The Preparation ;
(2,) The Treatment ;
(3,) The Reaction or Restoration Stage.

It does not follow that every bath prescription will consist of three distinct processes; but if we start with this view, and only omit one of them when we have good reason for doing so, mistakes are more likely to be avoided.

(1,) *The Preparation Stage.*—We have already spoken of the different value of degrees of temperature according to the activity of the cutaneous circulation at any moment, and we recognise that the application of cold which will produce reaction in the robust man will be followed by shock without reaction in the debilitated subject. The object of the preparation stage is to bring the cutaneous surface into that condition which is best suited for the treatment we propose to employ.

Suppose that we order two patients precisely similar in constitution and temperament to sponge themselves over with cold water immediately on rising from bed in the morning. We may find that one obtains a good reaction and is benefited by the process, the other is only chilled and depressed. If we examine the cause of these different results under apparently identical conditions, we discover that the one patient took the bath while the body was heated from the warmth of the bed from which he had risen, the other had gone half-dressed to the bath-room and allowed some time to elapse before commencing his bath. The skin had thus been cooled down, and the cutaneous circulation was not sufficiently active to produce reaction. Here the heat of the bed is a "preparation stage," effective in the first instance, but discounted in the second.

In prescribing baths it is generally better not to rely upon such methods of preparation, or, if they are made use of, to let them stand as part of the written instructions. Another difficulty might arise in this case from the use of the word "cold." One patient might take this to mean water fresh drawn from the tap, and the other, like the pilgrim who "boiled his peas," would have the water brought to his bedroom over night, a matter of detail, which may mean a difference of from 15° to 20° F. in the actual temperature of the water employed. It would be better to order water at 70° F. in the first instance, and gradually lower it from day to day as the cutaneous circulation gained in power.

One of the best preparations for the cold bath is active exercise, and here, of course, we distinguish between the body being *overheated*, with intense excitement of the heart, and exaggerated sensibility of the cutaneous nerves, and the quicker circulation of ordinary exercise of an active character. The fatal effects which have resulted from the sudden plunging into cold water while the

body is in the former condition have caused a popular impression that it is dangerous to bathe while the body is heated ; and at some of the public bathing establishments it is not an uncommon spectacle to see a whole school sitting down to wait until the effects of the slight exertion of walking to the establishment have passed off. This is not only an unnecessary proceeding, but it is an unwise one, because the body is in the best condition for the cold bath at the moment the walk is finished, whereas immediately after the process of cooling there is a certain degree of enervation of the cutaneous capillaries, and the process of reaction is not only delayed but diminished in intensity. In the medicinal use of baths, active or passive exercise will frequently form an advantageous preparation for cold baths, but more usually we prescribe some simple process for stimulating the skin by means of heat. These will be described under the heading of "tonic baths." In baths slightly above or below the temperature of the body no preparation stage is required, as the effect usually desired is the difference between the temperature of the air of the room and that of the bath with the skin in its normal condition. When very hot baths are ordered above a temperature of 102° F. it is frequently desirable to commence at 98° F. and raise rapidly to the point required. In this way we not only avoid shock, but much higher degrees of temperature can be borne Exception is made when the brief application of a high temperature is intended to produce strong stimulation, the result then produced closely resembles the reaction stage of a cold bath ; if the skin is dried with the hot sheet and covered immediately, tonic reaction ensues.

The Treatment.—This represents the bathing process by which the physician seeks to affect the organism for purposes of treatment. It will be more convenient to consider the various processes which may be employed in our next section, and it is only necessary to point out here that by attention to the preparation and reaction stages, it is possible to produce the effects we desire on patients who would not react to cold baths, or would be relaxed by heat if they were given as single applications.

The Reaction Stage.—The effect of any bathing process is to cause an alteration in the condition of the nerves and blood vessels of the skin, and the final result is to leave them in a condition of plus or minus tonicity. Our object in the reaction stage is to ensure the former condition after all baths. This object is attained either by a separate bathing process, or simply by the way in which the patient is dried after the bath. The process of drying appears so simple as

hardly to require notice, but it is a detail of very great importance in determining the result of a bathing operation.

At public establishments it is generally understood that a towel or sheet used for drying purposes is a "hot" cloth, but under some conditions we prescribe a "cold" cloth. The essential difference between the two is that a hot towel is necessary to remove all moisture from the surface of the body and prevent the effects of evaporation. If we wish to utilise the effects of evaporation we use the cold towel. This is the principal difference which affects our choice of the drying medium.

A person occupied in drying himself after the use of a cold bath is exposed to a second thermal process by the exposure of the wet skin to the atmosphere of the room. His efforts leave a certain amount of moisture behind, which by evaporation after the body is clothed may retard and diminish reaction. After cold baths, or in which cold is the final process, the drying cloth should consist of a sheet large enough to envelop the body, and this should not be only dry but hot. The bather dries his back by grasping the sides of the sheet and drawing it from side to side; he then removes the moisture from the front of the body by rubbing the hands over it, outside the sheet. When the body has been well dried by this process, there is no harm in exposure to the air, while friction of the skin is excited with an ordinary rough bath towel. A hot sheet is easily provided, as it is only necessary to have it folded and wound round the small can of hot water, the contents of which are generally required at one stage or another of every bathing operation.

A person emerging from a bath should never be allowed to stand on a cold floor. For persons in health a mat made of cork or some non-conducting material may suffice, but in medical bathing a hot surface should always be provided. This surface may be a towel wrung out of hot water, or a foot-pan over the bottom of which a little hot water has been poured. The effect of this in encouraging reaction may readily be appreciated by personal experiment.

Sea-bathing might be made much more luxurious, and rendered suitable for invalids and convalescents, if the bather supplied himself with a small flat tin filled with hot water, around which the towels could be placed, and on which he could stand during the process of drying.

After hot baths the "reaction stage" is of very great importance. It will be remembered that heat causes relaxation of the capillaries by over-stimulation, and that the condition produced is one of partial paresis, and also that the normal heat producing functions have been checked during the bath. This state is very unfavourable to tonic reaction.

At Mineral Spas where the systematic use of warm baths has been most extensively practised, we usually find the most extraordinary ignorance of the elementary principles of bathing. After all forms of baths the same routine is employed for all patients alike, whatever their disease, constitution or temperament. This had its origin in the idea that the mineral matter in the water was absorbed by the skin during the process of drying, and that to remove it was to take away from the good effects of the bath. Although the theory is now only recognised as a curiosity in mineral water mythology, the routine is still continued.

The patient on coming from the bath is covered with a hot sheet; he then lies on a couch, hot towels are put about the body, and he is tightly packed by means of a large blanket. This is practically a hot moist pack, and its effect will vary with the individual. The patient of relaxed habit, already heated by the bath, will perspire profusely, and he is then allowed to dress and leave the bath without any cooling or cleansing process. He may be directed to sit in a "cooling room" for twenty minutes, but as the heat radiated by the skin causes vapour to deposit on the under-garments, the process is equivalent to sitting in damp clothes, and dangerous results would happen if the majority of people living in this climate did not wear woollen material next the skin; as it is, a great relaxation of the cutaneous blood vessels is produced, and there is a feeling of weariness and exhaustion. This is so well recognised by the experience of mineral water physicians, that they have determined that it is not wise to use the bath oftener than once in forty-eight hours.

Another patient possessing the inactive skin, common in certain forms of hereditary gout, does not perspire, because the packing process is not continued long enough, or is accomplished with insufficient completeness, but is simply over-heated. He leaves the bath with the face flushed and his arteries throbbing, and subsequently may experience headache, giddiness, or nausea, followed by a feeling of general malaise.

At the Mineral Water Spa there is always a convenient excuse for all such symptoms after a bath. "It is the effect of the mineral water." "It must be endured as part of the treatment," etc., etc. Without contesting the therapeutic advantages to be derived from a course of immersions in mineral water, it cannot be too distinctly understood that no natural water of any sort or kind is capable of producing immediate physiological effects as a result of any mineral matter dissolved in it; and if unpleasant effects follow such immersions, it is only rarely that the fault does not lie either with the physician

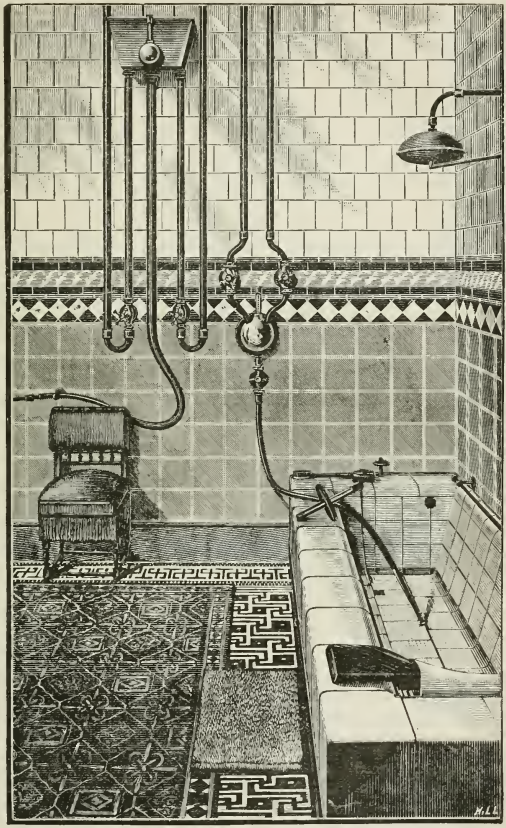

Fig. 3.

who prescribes the bath or with the attendant who administers it.

It is necessary to speak very clearly on this point, because even at Spas where appliances for graduating the temperature of the patient

after the bath have been recently added, this absurd routine of packing every patient while the skin is wet is still continued, even if he has been already cooled down by a graduated spray, or has just emerged dripping with perspiration from a vapour bath.

It is owing to such practices that warm methods of bathing have come to be regarded as relaxing and enervating, whereas in patients whose general functional activity is so depressed that there is no reaction to cold stimulation, the warm bath is not merely a stimulant, but by supplying heat adds to the vital power; in fact we can increase the functional activity in debilitated subjects by baths in which warmth occupies a large share of the process, in one-fourth the time which would be required if we were restricted to cold applications. The warm bath can therefore only be considered relaxing and enervating as a result of its improper use.

When the full physiological effect required from any warm bathing operation has been obtained, we must use some means for contracting the cutaneous capillaries, and removing the superfluous heat from the skin. This is most readily done by the use of water at a temperature of 10 to 30° F. below that of the bath. If we wish to promote vigorous reaction we employ water at a still lower temperature, but this depends upon the object we have in view. If we wish our warm process to have a sedative effect, we avoid vigorous reaction, and only apply our lower temperature of 10 to 15° F. for a few minutes; then we should dry the patient thoroughly with a warm sheet (not hot) by gently passing the hand over the outside surface, without friction, and then if the body does not appear sufficiently cool, we should allow him to rest on a couch covered lightly with a single blanket (not packed) until the circulation has regained its equilibrium.

If the object of our bath is to produce a high degree of stimulation, we should graduate the temperature rapidly to a point 25 to 30° F. below that of the bath, and then dry rapidly with the hot sheet, and allow the patient to dress at once.

The method of conducting such processes will be considered in the next section. Our endeavour here has been to lightly sketch the general principles which must guide us in prescribing baths. We aim to produce certain precise and definite results, and we know that these results will follow if our directions are properly carried out; but many adventitious circumstances may occur to entirely change the character of the result, and it is to guard against these that it is so necessary to consider the preparation and restoration stages of the bath in every detail.

BATHING PROCESSES AND APPLIANCES.

At bathing establishments the selection of the form of bath to be used in any particular case is not a matter of great difficulty, but in private practice, when we must not only take into account the patient's condition, but the conveniences at hand or obtainable, the skill and inventive capacity of the physician often plays an important part in devising the process to be adopted.

If our object is to employ a short application of cold to the whole body, a reclining or plunge bath would be one of the first appliances we should look for; but it might not be at hand, and there might also be a difficulty in procuring the necessary quantity of water. But a sheet wrung out of water, at the proper temperature, and wrapped round the bather will sufficiently answer our purpose; and if we have two sheets, and constantly change them, we can maintain the cold bath for any time that may be necessary.

We can adopt a similar course when we wish to secure the general application of a high temperature without appliances, but in this case our sheet should be made of flannel, so as to avoid too rapid loss of heat. If we wish, as we shall most often, to use a succession of temperatures, it is only necessary to have sufficient water of each degree of heat required to moisten a sheet, and to apply them as required.

A practical point we have to bear in mind, is that cold sheets rise in temperature from the moment of their application, while hot sheets rapidly fall. We can either take steps to avoid this variation by their rapid renewal, or make use of it for purposes of treatment. We need not apply a fresh sheet for every degree of temperature required, but by directing them to be left *in situ* for a longer or shorter time, graduate the temperatures in the direction we require.

Practically we always begin with the hot sheet at 100° to 103° F., follow it by one at 85° F., and then if necessary, employ one at a lower degree of temperature. A difference of 3° to 5° F. should be always allowed between the temperatures of the water used to moisten the sheet, and that required to be applied to the bather.

When we wish to employ a prolonged application of a temperature from 96° to 100° F., without appliances, we adopt a different process as more convenient. As the body radiates heat at 98°F., we can utilise this heat to keep our sheet warm if we prevent its loss by conduction and evaporation. This we can do by interposing a non-conducting material between our sheet and the air of the room. Blankets are always at hand, and form the most convenient means. By applying these in such a manner that we prevent the loss of heat by evaporation and radiation, we have the familiar process known as "packing," which will be described in

detail under the head of "diaphoretic baths"; but here we mention it as a means of securing the effect of a warm bath, without the aid of "the bath," and with only a pint of water.

According to the temperature we require, we increase or diminish the number of our blankets, and here we have to be guided a little by the constitution and temperament of our patient. Two blankets properly applied will generally maintain the temperature of the sheet at 97° to 100°F., but in persons of feeble circulation three may be necessary.

We have here to remember that if our "pack" is well done, heat accumulates; and if the process is continued for more than 15 to 20 minutes, the pack must either be renewed or a certain amount of heat permitted to escape by loosening the enveloping blankets. Such points can be determined by using the thermometer during the process.

It may happen that we wish to produce the effects of a "douche" or "spray" when no such appliances are available.

This cannot be accomplished to the whole body at once very satisfactorily, but to very considerable portions of it these effects can be simulated by frictions, and by rapid patting with the hands used in alternation. This can be done either in a bath or outside the sheet when used as we have described above.

If we wish to produce the effects of a very powerful douche, without such appliance, we can use two towels folded and doubled, the ends being dipped in water of the required temperature; we can then strike the part, first with one and then with the other, with steadily increasing rapidity, and when this is done with skill the impact is so continuous that the separate strikings are not distinguishable by the patient. The great art in all such movements is to begin slowly, the elbows being kept close to the body, to which a swaying movement is imparted as the blows are delivered, the motion to the towels being entirely communicated from the wrist, otherwise it will be found difficult to give the blows with the evenness and regularity necessary to the purpose.

The general suggestions will indicate the way in which difficulties in regard to appliances can be surmounted. The physician working in this way, with an intelligent purpose, will often produce more satisfactory results than those obtained by sending patients to undergo a mechanical routine at some Continental Spa.

DIAPHORETIC BATHS.—Under this heading we include those bathing processes which are used to produce free perspiration.

In acute inflammatory disorders we can check the progress of disease, and make days or even weeks of difference to the duration of an illness, by causing free action of the skin; but the particular value of such treatment depends upon its being carried out at the earliest

possible stage. Drugs may not be at hand, and if they are, they are slower in their action and less certain than thermal methods; and the drug intended to produce this result, may interfere with the action of other organs, or check that of another remedy which may be more specific to the inflammation which it is our desire to control.

In chronic diseases, where by regularly exciting perspiration we desire to give relief to the kidneys, or to remove morbid products from the blood, and the treatment of chronic gout, rheumatism, and kidney disease, the same reasons give diaphoretic baths a very great advantage over drugs of the same class.

The following methods may be employed :—

Packing.—We notice that in most medical text-books the term "wet-packing" is used as synonymous with "cold-sheet packing"; but as a matter of fact cold-sheet packing is a comparatively rarely indicated remedy in thermal treatment.

Great importance has been attached to the cold-sheet pack as a means of abstracting heat, and as a fall of temperature follows the process, the cold sheet has received credit for a share in the result which does not belong to it. The actual loss of heat by abstraction in the process of cold packing is very limited. To render it effective we must constantly change the sheet, after the method of imitating the effect of the cold bath described above.

But the object of "packing" is to store up the heat radiated from the body, and collect it in sufficient quantity to render it useful for thermal purposes. In theory the application of the cold sheet will stimulate the production of heat, and cause a primary contraction of the blood vessels, and their reaction will favour the dilatation of the capillaries and the loss of heat by radiation; but clinically we shall find that cutaneous shock is frequently produced, and although there may be actual rise of temperature between the sheet and the skin, the patient feels cold during the process, and is subsequently depressed.

Some authors suggest the use of the tepid sheet as a means of overcoming this difficulty; but in practice we shall find that the patient, who will not "warm" in a cold sheet, will rarely do so when tepid takes the place of the cold water out of which the sheet is wrung.

We have described the process of simulating the warm bath by means of packing, and we are considering here the process for producing free perspiration, and the abstraction of heat which accompanies the process.

As the object of this "pack" is not to cause loss of heat by conduction, but by radiation, and dilatation of the capillaries is the essential condition which we wish to produce, the sheet should be applied at a

high temperature. But it will be found in practice that a certain amount of dexterity will be required to pack a patient in a hot moist cotton sheet, because it is a material which loses its heat rapidly, so we may dispense with the sheet and use a thin blanket or a flannel sheet in its place.

We commence a diaphoretic pack by spreading four blankets, one above the other, on a bed or couch, and then we take another blanket smaller and thinner than the rest, roll it up like a rug when used for travelling purposes, place it on end in a basin, and pour a jug of water, nearly at the boiling point, through the centre ; by pressing it at the sides the water quickly saturates the whole blanket, and then it is thrown into a large towel, by twisting the ends of which all superfluous moisture is got rid of. This is an important practical point, as the blanket must be "moist," not "wet," or the action is delayed.

This is now spread on the top of the dry blankets, and, if not too hot, the patient is placed in the centre, so that the upper border of the blankets is on a level with the neck.

The operator stands by preference on the left side of the patient, whose arms are at first raised. The left side of the moist blanket is then carried across the body and tucked well under the right axilla and right side of the patient. It is applied tightly over the chest and abdomen, but more loosely over the lower limbs, so that, by a gentle stroke of the hand, it is made to lie in contact with the inner side of the thighs and legs, which would otherwise escape contact with the moist surface.

The patient is then directed to bring the arms to the side of the body, and the right side of the blanket is brought across the body so as to cover both shoulders, the upper corner is placed under the left shoulder blade and the rest tucked under the side nearest the operator ; this portion of the blanket is drawn tightly across the whole length of the body, which is also the case with the dry blankets, which are now applied separately in a similar manner, the upper corner of each side being placed under the opposite shoulder-blade and the remainder under the side of the body.

If this is done properly, the escape of heat is prevented at the neck by the way in which the blankets have been folded across it, and the only open part is at the feet, beyond which the blankets will project for about eighteen inches. It is usual to place a warm-water bottle to the feet through this opening, and then fold the free end of the blankets over it and place it under the legs.

It is advisable that the *moist* sheet or blanket should not project

beyond the feet, as then we have more moisture than we want at the point where reaction is most feeble.

This process is really very simple when once it has been performed, and occupies but a few minutes. In the convulsions of children, as well as in many of the inflammatory affections from which they suffer, it has proved an invaluable remedy in the writer's hands.

In such case it is only necessary to ask for a jug of hot water, and while it is being procured, to take a couple of full-sized blankets, double them so as to serve the purpose of four, then moisten a "cot blanket" from the child's bed, apply the pack, and then put the child into the nurse's or mother's arms. The whole thing can be done in five minutes, and the efficacy of the remedy is frequently manifested in an even shorter space of time.

In cases where there are already indications of commencing inflammation in a particular organ, it is good practice to take a flannel wrung out of hot water and apply it four-fold in thickness over the site of the organ just before the wet blanket is packed round the patient.

When we use this process in chronic gout, rheumatism, kidney and nervous diseases, as a systematic treatment, we modify the proceeding in the following way :—Instead of the moist blanket we use one cotton sheet and one flannel sheet of the same size. These are both moistened. The cotton sheet being next the skin is more comfortable than the blanket, and can be washed after each application. The object of the flannel sheet is to maintain the heat of the cotton one prior to its application.

Next to this we place a sheet of thin mackintosh in lieu of one of the dry blankets.

This pack can be conveniently prepared for use in another room and then folded up in the order used in the process, and put by the bed side while the patient is prepared. After a delay of ten minutes the moist sheet will be found sufficiently hot for the purpose in view.

Dry Packing.—In this process the patient is enveloped in dry blankets, very tightly applied, additional heat being produced by placing feather beds, etc., over the body.

It takes from two to six hours to produce perspiration in this way, because a very much higher degree of temperature is required to produce sweating by means of dry heat than by moist heat, and the condition produced is one very closely allied to fever. It is often followed by headache, general *malaise* and furred tongue, and the process is only mentioned to caution the practitioner against its use.

When the skin is moist or there is already some perspiration, the wet sheet is unnecessary, but this is not a "dry" pack.

The Vapour Bath.—This bath stands next in relation to the hot pack.

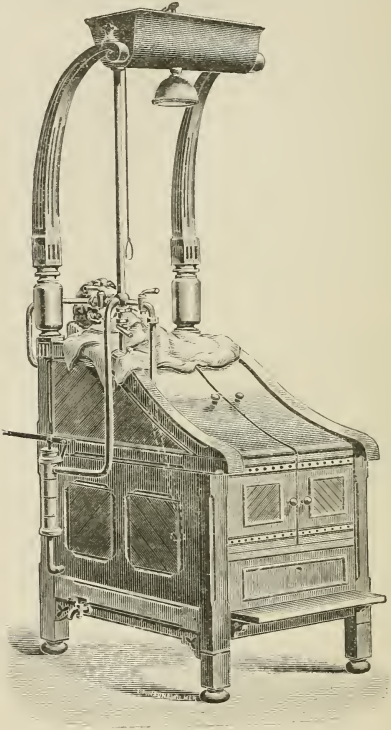

Fig. 4.

In Russia and other countries where it is and has been in general use from the earliest periods, it takes the form of a chamber, the atmosphere of which is saturated with vapour at a high temperature

(120°-130° F.). The patient sits in this chamber until free perspiration has been produced, and the body is cooled down by the application of cold water or by rolling in the snow.

In this country the vapour bath is usually applied only to the body, the patient sits in a box with his head through a hole in the cover, the *tout ensemble* bringing forcibly to mind the parish "stocks" of former days. As the action of the vapour is to cause great relaxation of the cutaneous blood vessels, and prior to free perspiration a condition closely resembling the first stages of syncope, this position is one of the worst that could be chosen.

In the construction of these baths the seat should be so arranged that the patient can take the bath in the semi-reclining position, and instead of the hole in the cover a pair of blanket curtains can be so arranged as to effectually prevent the escape of vapour, while great latitude of movement is given to the head.

This arrangement will be readily understood from the illustration of a bath of this kind manufactured by Messrs. Llewellins & James, of Bristol (*Fig* 4), and which was modelled from one the writer had constructed for his own use. As after the use of the vapour bath it is absolutely necessary to apply water at a low temperature, this bath is fitted with a needle-bath or spray, so that by simply turning a handle, the patient can apply the cooling process before he leaves the bath. This arrangement is not only very simple, but the bath is so constructed that it can be administered without the aid of an attendant.

We may mention, incidentally, that this bath may be used as a needle-bath, or spray-bath only, the patient being protected from the air of the room during the process. Invalids who are ordered a cold bathing process in the morning on rising, can have the air of the bath heated by means of a spirit lamp for a few minutes prior to entering it, and are thus able to take a spray at a much lower temperature than could be used if the body were exposed to the ordinary atmosphere of the bath room.

An extemporaneous vapour bath can be devised in cases of emergency, by bringing a brick to a red heat by placing it on the fire, and then plunging it into a zinc bucket half-filled with boiling water. The bucket is placed under an ordinary wooden chair, and the steam is prevented from escaping by enveloping the patient in the manner described below.

A wooden "Windsor" chair with a high back is very suitable for extemporaneous vapour baths; and it will be found convenient to cover the seat and back with a blanket or large towel wrung out

of hot water, and placed so that it hangs nine or ten inches below the seat.

A sheet is then placed over the front of the body, one end of which touches the floor and the other is tied round the patient's neck; another sheet is placed over the back and tied in front. Two blankets are then applied in a similar manner.

A better arrangement for generating steam in domestic practice is illustrated below. It is very simple and inexpensive and obviates all difficulty and danger.

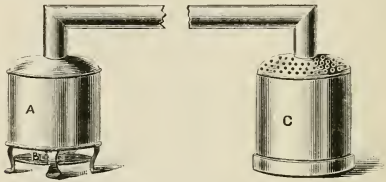

Fig. 5.

It consists of a boiler, and a receiver connected by a tube two inches in diameter.

The boiler is a round tin or copper vessel (A), with a closely fitting lid, from the centre of which the tube projects at a right angle. The receiver (C) is a similar vessel, but having the lid freely perforated to permit the escape of the steam. The excess of moisture being deposited in this vessel, a very "bright" steam is produced in consequence.

The tube should be constructed from four to five feet in length in order that the heating apparatus, which may be a portable gas or oil stove, is at a sufficient distance from the sheets and blankets to be perfectly safe.

It will be found convenient in practice to place the drying sheets and towels round the pipe, so that they are properly heated when required after the cooling process, which of course follows the use of the vapour bath.

When it is desired to use this apparatus with the patient in the horizontal position, it is only necessary to use a tube bent at a different angle; and instead of the receiver, we employ a tube of larger calibre (three inches in diameter), which is perforated at the upper part only. This lies on the bed between the legs of the patient, a thick towel or blanket being placed under it and over the limbs to protect them from

the heat directly radiated. It is usual to place a wicker-work cradle over the patient in order to form a tent in which the steam can circulate, but if this is not at hand, we can fix a piece of cord to the tester of the bed, and attach it to the rail at the foot of the bed, in a direct line with the centre of the patient's body, and then with a piece of twine run through the centre of the blanket immediately beneath the cord, we can lift the blankets to the desired height, and retain them by fixing the twine to the cord over it; three attachments of this kind are usually sufficient.

Natural Vapour Baths.—At Bath we employ the natural vapour as it rises from the hot springs without artificial heat; and free perspiration usually takes place in ten minutes.

We shall speak of *local vapour baths* under another heading. It does not appear to be clearly understood that the local vapour bath does not produce sweating of the part to which it is applied. The radiation of heat from the large surface of the skin not exposed to its action prevents local sudorific effects. All that it is possible to produce by such means is local perspiration which precedes general perspiration by a few minutes, and in the case of general diaphoresis, an increased amount at the point acted upon. This does not lessen the value of the local vapour bath, which is an invaluable agent in the treatment of diseases of the joints, but it is important that its true position should be recognised.

Turkish and Hot Air Baths.—We need hardly occupy space here in describing the Turkish Bath. By its aid we expose both the whole cutaneous surface and also the respiratory organs to the highest degrees of temperature used in thermal treatment. We accomplish this by gradually passing from a lower to a higher degree of heat, so that no violent shock is given to the system. It is absolutely essential that such baths should be well ventilated, and this is rarely the case, if the old Roman method of heating from the floor, or the more modern one of heating by hot-water pipes passed round the hot chamber is followed. Most baths are now heated by causing the external air to pass round a stove from which it is delivered into the hottest room and from thence radiates to the other chambers. By this means a continuous supply of fresh air is obtained, and this is in the highest degree essential.

The Lamp Bath is a modification of the Turkish, the body of the patient only being exposed to the heat, and so that the patient breathes the ordinary atmosphere of the room. In construction this bath is precisely similar to the vapour bath, and the one we have illustrated (*Fig.* 4) answers equally well for dry air baths; but we may mention that it is

not desirable to conduct the cooling process, in this case, in the same bath, as the admission of cold water would cause steam to be generated, and this is not in accordance with the object of the bath.

The heat of the lamp bath is produced from one or two spirit lamps according to the size of the flame. We may mention that arrangements for heating the bath by hot air conducted from outside are not successful unless very great heat is employed. It can be done by hot-water pipes connected with a high pressure boiler, but the only advantage to be gained by this arrangement is that the heated air does not then contain the products of combustion, which so far as practical observation goes, do not appear to exercise any prejudical effects.

An extemporaneous lamp bath may be given in the same manner as the domestic vapour bath, two or three spirit flames or a small gas stove under the chair being used to produce heat. In these baths we do not usually moisten the blanket placed upon the chair, but when it is our object to produce free perspiration as rapidly as possible, it is often convenient to do so.

It is important that a piece of wire netting should be placed round the legs of the chair to prevent any chance of contact between the enveloping sheets and the flame. In all cases the attendant should be instructed to light and place the lamps in position before the patient is placed on the chair, and never to extinguish them until the patient and the enveloping sheets have been removed. By such simple precautions the bath may always be administered without danger.

Duration of Diaphoretic Baths.—It is not advisable to fix a definite time for the duration of diaphoretic baths ; a good rule is to continue the bath until perspiration appears freely on the forehead. When several baths have been taken, the sweating process may be allowed to continue for five to fifteen minutes, but experience will show that it is of greater advantage to give frequent short baths, than to continue any diaphoretic bath too long.

Choice of Diaphoretic Methods.—It is well known that perspiration takes place at a much lower temperature with moist heat than with dry heat ; this is usually explained by the fact that air is not such a good conductor of heat as vapour. This may explain the physical cause, but we recognise a distinct clinical difference in the action of these two methods of producing diaphoresis. When our object is to produce the greatest possible dilatation of the capillaries in the shortest possible time, and also to produce a sedative action upon the sensory nervous system, we employ moist heat. When we desire to stimulate powerfully the sensory nervous system, and through it the

reflex activity of internal organs, previous to producing diaphoresis, which then comes as a relief to the excited condition of the organism which we have produced, we employ *dry* heat. In the healthy, when diaphoretic baths are employed to cleanse the skin, encourage tissue metamorphosis, and promote the general functional activity, the dry air bath is preferable to vapour baths. In rheumatism, gout, and in conditions where the tissue irritability of any organ contra-indicates undue excitement, vapour baths are preferable ; and in such cases even the vapour baths must be often given at a low temperature or its place be taken by the hot moist pack. In melancholia, hypochondriasis and forms of mental disease, when there is great depression of function, dry air baths are indicated ; on the other hand in cases of mania, and functional disorders of the nervous system associated with great nervous excitement, hot moist packing and vapour baths are to be preferred.

The simple act of diaphoresis will do good in both classes of cases, but the results will be more satisfactory if we differentiate between moist and dry air methods.

Reaction Stage of Diaphoretic Baths.—It is hardly necessary to say that after all diaphoretic baths, the application of water at a low temperature is essential. The best appliance is the graduated spray or needle bath. In public establishments these should always be found in connection with the dry or moist air baths, which are not "complete baths" in themselves. In domestic practice, the sponge or plunge bath with water at 70° to 85° F., will answer the purpose.

In the case of invalids, the cooling process may consist in sponging one limb at a time, with water at 80°-85° F., only exposing that portion of the body which is being treated, and covering it immediately afterwards.

TONIC BATHS.—Under this heading we may consider those thermal processes the primary aim of which is either: (1,) To improve the circulation and nutrition of the skin ; (2,) To effect the circulation of internal organs by changing the area of blood distribution ; (3,) To stimulate the spinal cord, and reflexly through it to increase the functional activity of the muscles, secretory apparatus, and viscera.

Each of these effects is produced by all baths to a greater or lesser extent, but we shall speak here of those processes which we employ with the more particular object of producing one or other of them.

The **Graduated Spray** is the most important appliance in this part of treatment. By its means we can produce rapid changes in the temperature of the patient, and employ thermal stimuli with a precision which leaves nothing to be desired.

The appliance consists of a hot and cold water pipe which meet in a small receptacle, called the "mixing chamber." This will be understood by referring to *Fig.* 6. In the mixing chamber a thermometer is per-

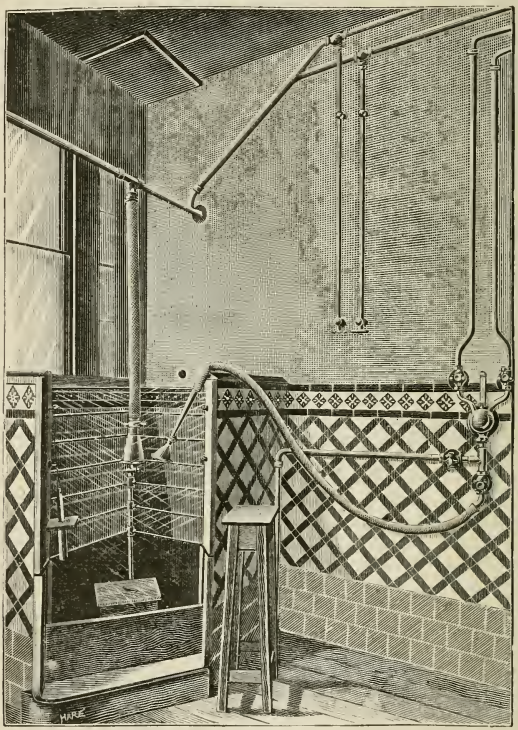

Fig. 6.

manently fixed, so that the temperature of the water can be ascertained at any moment. At the bottom of this chamber the pipe for delivering the spray is fixed. In use it is only necessary to regulate the quantity of

the cold or hot water admitted to the chamber by means of taps, to obtain any desired temperature at any given moment. There should always be a good pressure of water for use in the spray bath, as it is always easy to diminish the force of the water when necessary by a tap fixed in the delivery pipe. When we use the spray only for thermal purposes it is best applied through a large but finely perforated rose; when we wish to make use of the impact of water, an ordinary douche nozzle with a "spreader" attached, or a rose with larger perforations, may be used. A spray bath may be usually commenced at a temperature of 100° F., and then if a higher degree is required, the hot water is gently admitted. The symptoms produced by a very high temperature are very similar to the shock produced by cold; and spasmodic respiration is one of the first indications that a sufficiently high temperature has been obtained. The temperature should always be graduated gently and evenly; rapid changes always indicate incompetence on the part of the attendant.

The Needle Bath, one form of which is shown in *Fig.* 6, is simply a spray bath in another form: the pipes are usually arranged in a series of semicircles, and are finely perforated. Both baths are useful for graduating the temperature of patients after warm immersions, or after hot air and vapour baths, but they are also "complete" baths in themselves. When our object is to stimulate the functional activity of the circulation, we use a high temperature to bring blood to the surface, and follow it by a low one to cause its return; by repeating this proceeding and allowing a period of two minutes for each, we can alternately retard and accelerate the circulation not only of the skin, but of every organ in the body. We can in this way produce the effects of a number of complete baths during a single bathing process. We act not merely by the mechanical abstraction of a certain quantity of blood by dilating the cutaneous capillaries and so diminishing the quantity in the other organs, but reflexly also through the nervous system, for as the cutaneous capillaries dilate, those of the internal viscera contract, and *vice versa.*

Recognizing that in chronic disease, we have to deal very largely with a form of circulatory stasis in one organ or another, we can understand the very happy results which follow the use of thermal processes which cause what we venture to call a "lateral" circulation between the skin and the viscera.

The Scottish Douche.—This bath, which is figured here, consists essentially of two douches, one of which is graduated so that any desired temperature can be obtained; the other delivers a stream of cold water. In practice we use the two douches in combination, one

at a temperature of 100° to 105° F., the other quite cold. We first apply the hot douche to the surface of the back, and then while it is playing on the upper part of the back, the cold stream is allowed to fall

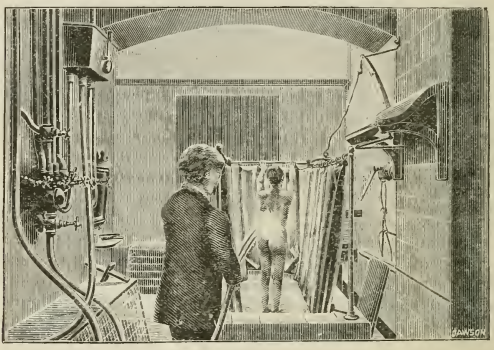

Fig. 7.

upon the lower part, and then by changing the position of the nozzles, the cold stream falls upon the upper part and the hot on the lower. By constantly reversing the action no portion of the skin is exposed to the high or low temperature for more than a few seconds, so that we practically eliminate thermal effects and while we obtain the high degree of stimulation which results from the powerful impact of the volume of the water on the skin.

The bath represented in the illustration (*Fig.* 7) is the one employed at the Thermal Establishment at Bath, and is equally useful for the treatment of local conditions, such as stiff joints and atrophied or weakened muscles.

The method we have represented finds its use chiefly in cases of hysteria and allied conditions in which we wish to produce a powerful stimulation of the spinal cord.

"La Douche" is the name given by Prof. Charcöt to a very powerful cold douche to which he attaches considerable importance in the same class of disorders. The attendant stands on a rostrum placed in a low roofed room; the patient seated on a chair is exposed either to the direct impact of the cold douche, or by directing it to the ceiling it falls upon him in the form of a fine shower. An excellent specimen of this apparatus may

be seen at Ben Rhydding, Yorkshire. While very useful and a most powerful stimulant to the spinal cord, it cannot be continued so long as when the double or "Scottish" douching method is adopted, and we think that this bath would be improved by the addition of the hot douche.

The "Bath" method.—At Bath we attach great importance to exercise taken during the course of the bathing process, and this especially in the case of persons who have stiffened limbs either from

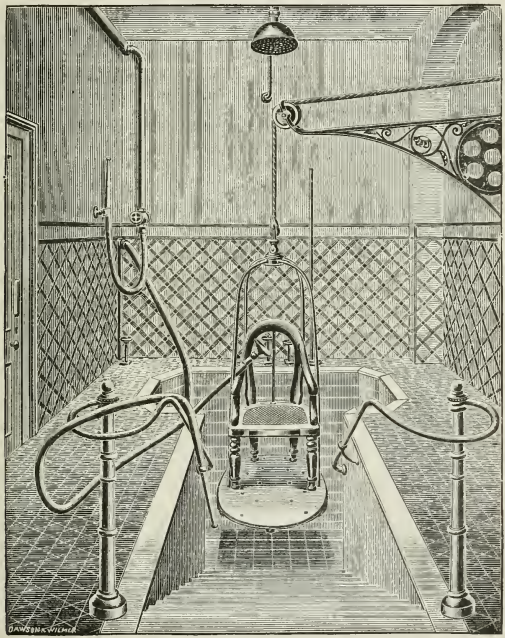

Fig. 8.

joint disease, atony of muscle or paralysis. Patients can move their limbs when immersed in water to a very much greater extent than is

possible in the air, and in this they are aided by the natural buoyancy of the mineral water. We therefore use a "deep" bath at 98° to 100° F. in the first stage, which is large enough for the patient to walk about in and in which he can freely exercise all his limbs. When this has been done for ten to fifteen minutes the water of the bath is lowered to the knees and the graduated spray is applied as in the ordinary spray bath. As each bath requires about eighteen hogsheads of hot water, this method of bathing is hardly possible except where nature supplies a practically unlimited quantity. The illustration we give (*fig.* 8) of one of these baths shows the chair by which patients unable to walk are lifted into and removed from the bath.

Sedative Baths.—When the object of a bath is to exercise a sedative effect upon the nervous system it is necessary that it should nearly approach the indifferent point. In the normal condition of the body 90° to 95° F. will represent the temperature of water to be used either for general or local sedative purposes. Under conditions of excitement of the nervous system a slightly higher temperature may be used, but it should not exceed 98° F.

Such temperature may be conveniently applied either by the use of the reclining bath or by the warm sheet pack; locally by baths suitable for the portion of the body to be treated, or by compresses and packs.

Thus a warm compress applied over the abdomen will frequently cure that form of sleeplessness due to irritation of the vagus nerve, while a hot fomentation would have the reverse effect.

On the other hand when the insomnia is the result of cerebral congestion, a strong counter-irritant in the form of a mustard-plaster to the nape of the neck will frequently prove the most effective remedy. All diaphoretic baths may be considered as sedative in their final effects, the hot moist pack being the best process; next, the vapour bath at a low temperature; then the lamp bath; and lastly the Turkish bath. We propose to consider the sedative and other effects of local baths under that heading.

Antipyretic Baths.—We have explained the rationale of various methods of producing antipyresis in the first part of this article. We can employ the principle of direct conduction—radiation or evaporation.

The method usually employed for reducing the temperature by conduction, is by the prolonged immersion in the cold bath. This is employed as follows: The patient is lifted into a bath at 98° F., the body being supported by a strong sheet which is supported either by a mechanical apparatus or the arms of the attendants. The bath is provided with an exit pipe by which the water can readily escape

Directly the patient reaches the bath cold water is admitted, and the temperature of the bath is lowered to 60° F. or even lower by the addition of ice. The temperature of the patient is taken by means of a thermometer placed in the rectum ; and directly a positive reduction has taken place the patient is removed from the bath, rapidly dried, and wrapped in blankets. This process is repeated twice or thrice a day, or even oftener.

Those who have had experience of this method of treatment in typhoid and other continued fevers consider it better than any other antipyretic method. We cannot speak of it from personal experience, as we never employ the principle of conduction except in cases of extreme hyperpyrexia, and then we have always resorted to the rapid application of cold sheets, because the arrangements for administering the cold bath have not been accessible at the moment when required. The difficulty we have in accepting the principle of antipyresis, except in cases of hyperpyrexia, is that a cold bath continued sufficiently long to overcome its effects as a stimulant to the production of heat must be devitalising, and while admitting that the cold bath treatment gives better results than antipyresis accomplished by drugs, the question is whether any substantial benefit is gained by the patient unless the fever, instead of being merely a symptom of the general condition, rises to a point at which it becomes a danger to life. There is undoubtedly a danger of causing retrocessal congestion of some internal organ, and there is also a grave doubt whether by the frequent application of cold we place the skin in the best condition for performing its natural function as an organ for radiating heat from the body.

Unless the temperature exceeds 105° F. we prefer to trust to the principle of radiation combined with evaporation. That is, we apply the moist warm pack for thirty to forty-five minutes, which soothes the irritability of the sensory nerves and relaxes the capillaries ; and then the body is sponged with tepid water and incompletely dried. The clinical results have been so satisfactory that we have felt no inclination to change our mode of treatment, although we recognize fully the more extended experience in the treatment of fevers of those who recommend the cold bath method. Local antipyretic methods will be considered under Local Baths, where they have a very different significance than when they are applied to the whole surface of the body.

LOCAL BATHS.—A compress may be described as a local pack, or a pack as a compress to the whole body. The principles involved in the application are identical. The difference in the result is due to the fact that the blood stream is a constant equaliser of the temperature in all

parts of the body, and that the effect of the local bath cannot be wholly confined to the part to which it is applied, nor can we leave out of consideration the condition of the rest of the body in determining the result of the local bath.

A local vapour bath, or a local "hot moist pack" do not therefore belong to the class of "diaphoretic" baths; they do not produce local sweating, although they do by dilating the capillaries of the part, increase the amount of insensible perspiration.

We may in all local baths order a much higher degree of stimulation both in the hot and cold stages, than when general baths are given, and we can be more certain of reaction after single processes than we are in the case of whole baths.

A Compress consists of a moist cloth next to the skin; mackintosh, or waterproof jaconet, above the wet cloth, and two or three folds of flannel above this. The whole is applied in such a manner as to fit tightly over the part, and so as to exclude the air. This is accomplished by making the waterproof covering slightly larger than the moist cloth, and the enveloping flannel still larger so that it overlaps the whole. The object of a compress is to produce relaxation of the skin and subcutaneous tissues over the part to which it is applied, and to exercise a sedative effect upon the sensory nerves. Its employment tends to relieve congestion of subjacent organs, and when continuously used acts as a mild counter-irritant and probably causes reflex contraction of the blood vessels in organs susceptible to the action of such reflex stimuli. Whether these organs stand in any direct anatomical relation to the part of the skin acted upon, it is difficult to decide. Clinical experience appears to show that the circulation of the brain is controlled most efficiently by applications to the feet, while applications to the hand affect the respiratory centres, and those applied over the epigastrium and covering the solar plexus, the digestive organs.

By stimulating the circulation in the feet we can undoubtedly cause contraction of the vessels of the brain, and we may accomplish this ether by the hot foot bath, or by the *short* application of a high degree of cold, followed by friction.

Patients suffering from asthma will often find immediate relief from plunging the hands into water at a high temperature, and the value of the stomach compress in the cure of chronic digestive disorders is well known.

The compress corresponds to a local warm bath at 98 to 100° F., and such a bath to be of service locally must be continued for a considerable time; therefore, except when it is used for the pelvic

troubles, when the sitz bath is indicated, the compress is generally the preferable mode of treatment.

Exception may be made in the case of chronic stiffening of joints, especially at the extremities, when the hand or foot bath is used for a prolonged period each day and the patient is directed to make efforts to move the joints during the course of immersion.

Space will not permit us to describe the various forms of the compress, but we may mention that a convenient form for the feet, may be made by wringing a cotton sock out of warm water, directing this to be put on, and then covered with two knitted woollen socks. A compress may be made for the hands by using gloves in a similar manner.

A form of compress of great value in chronic imflammatory conditions of the digestive organs, and also in typhoid fever, consists of a towel wrung out of warm water and laid over the abdomen. This is kept in position by two folds of blanket, or three of flannel, wrapped round the body; no mackintosh sheet is used in this case and the towel is re-moistened every two hours.

Local Application of High Temperatures.—In conditions such as we have described, when the inflammatory condition is acute, and attended with severe pain, we require a higher degree of temperature, and for this we may use local immersions, foment pads, local vapour baths, or the application of dry heat.

In the choice of dry and moist heat methods, the preference may be always given to the latter, unless the pain is deep-seated, and we require its penetration rather than its local effect upon the skin.

Thus, for pain in the kidneys, deep-seated muscles of the back, and sciatic nerve, dry heat is usually preferable. A ready expedient in this instance is a bag two-thirds full of heated salt or sand. This is placed as a pillow for the patient to lie upon. It is usually prepared at a higher temperature than could be borne by direct contact, and several layers of flannel are interposed between it and the skin; as the heat diminishes the flannels are removed, so that a high degree of heat is maintained for a long period. The india-rubber hot water bottle usually takes the place of the salt-bag in modern practice.

For the relief of pain caused by inflammation in the abdomen, and joints, and superficial muscles, moist heat is to be preferred.

The Foment Pad is a convenient method. This consists of six folds of flannel sewn together, and of the required size. It is moistened with water at a high temperature and applied precisely like a compress, only we use a greater thickness of flannel to envelope the whole so as to retain the heat better. Sometimes this is maintained

by placing a hot water can, or india rubber bottle, between the folds of the outer flannel.

The Poultice is another method too well known to need description.

The Bran-bag is useful when we wish to avoid weight upon the part treated. It consists of a muslin bag partially filled with bran, and this is moistened with hot water, and placed over the part until its heat evaporates. In practice two of these are employed, one being put on as the other is removed, the renewal taking place every five to fifteen minutes during its operation.

The Local Vapour Bath is undoubtedly the best way of supplying moist heat in cases of acute inflammation.

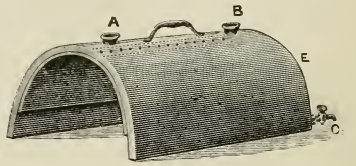

Fig. 9.

The Vaporarium, which is suitable for private or hospital practice, was introduced by the writer after many trials of other methods. Practically it consists of a double copper cover (*Fig.* 9), made in two sizes, one suitable for a single limb, the other for both extremities, the abdomen, or thorax. Boiling water is poured into the upper part (at B), and permitted to escape by two outlet pipes (C) at the bottom. A certain quantity is allowed to run through, until the metal is thoroughly heated, and then both inlet and outlet are closed. The end (E) may be closed when the limb is not required to project beyond it.

A flannel saturated with hot water is applied to the part, the cover is placed over it, and heat radiation prevented by wrapping the whole in a blanket.

A local vapour bath is thus produced which will retain a high temperature for at least an hour, and if required, longer; the cover can be re-filled without disturbing the patient. In cases of chronic joint disease, the writer frequently uses this apparatus for two hours twice-a-day; and as the patient takes the bath in the recumbent position this does not prove inconvenient, and as it requires no subsequent attention on the part of the nurse or attendant it is a very simple process to administer. This apparatus can be obtained from Messrs. Davis & Son, Milsom street, Bath.

The Berthollet Local Vapour Bath is illustrated below from one in

use at the Thermal Establishment at Bath. The natural vapour as it rises from the hot springs at 110° F. to 112° F., is admitted into a central cylinder, to which tubes are attached for conveniently conveying the vapour to any part of the body.

As represented here it is arranged for both lower limbs, which are inserted into the tube in the foreground. When nature does not supply the vapour, it would be possible to produce a similar effect by a vaporising arrangement inside the cylinder.

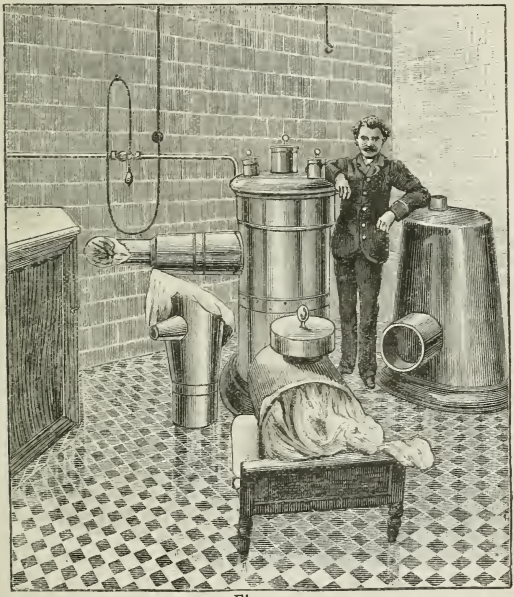

Fig. 10.

Local Abstraction of Heat.—This is accomplished in its most simple form by the prolonged immersion of the part in cold water. Short immersions increase the heat of the part by subsequent reaction.

Cold, to produce permanent loss of heat and diminished circulatory activity at the point of application, must be maintained for at least

thirty to forty-five minutes. As immersion in cold water is not always convenient, we employ very frequently the principle of evaporation, that is, we keep a single fold of linen in contact with the part and maintain this constantly moistened. But as spirit evaporates more rapidly than water, and therefore produces more rapid loss of heat, we usually mix spirit with the water, and thus have the "spirit lotion" which is familiar to all as a cooling application; but we notice that this is very frequently applied in the form of a compress, and is thus rendered perfectly useless for the object it is intended to serve.

To produce rapid loss of heat it is necessary to have the water in the bath constantly changing, and for this we use the "running," sitz and foot-baths. A still more rapid effect can be produced by using a gentle stream of water by means of a spray; the heat thus abstracted being instantly removed from the body, a great loss of heat is thus produced by water which if used for the purpose of immersion would not represent a very high degree of intensity on the cold scale.

Acting precisely on this principle, the writer almost invariably employs the following simple and convenient method for the local abstraction of heat.

The apparatus consists of two yards of "compo" piping which is manufactured for pneumatic bells. This is doubled, and folded upon itself into a circle, or wound round a limb or made into any shape that may be convenient to the part to which it is intended to be applied. To each of the free ends a piece of india-rubber tubing is attached, and one of them conveys water from a vessel placed at a slightly higher level than the patient, and the other acts as an exit pipe and empties itself into a receptacle placed under the bed. By means of a tap a gentle stream of cold water is allowed to circulate through he pipes, and as the metal abstracts heat from the part, and this is directly conveyed away by the stream of cold water, we can produce all the effects of an ice-bag, although the water employed may not be below 60° F. As the process is a perfectly dry one and of the utmost simplicity, it can be commended to the profession for use in all cases where ice-bags are usually employed.

In cases of spinal irritation, when we wish to alternate heat and cold, and the impact of sprays or douche would not be tolerated, the writer uses this dry method in preference to all others. This only requires the use of a small hot and cold water tank, the exit pipes of which are joined by a **Y** shaped tube. The hot and cold water is allowed to circulate in alternation. This simple apparatus can be obtained at a small cost from Davis & Son, Milsom street, Bath.

Douches.—The ordinary form of local douche is shown in Fig. 6.

The object is to produce the effect of mechanical impact upon the part, and so promote resolution and absorption of morbid products, and to produce tonic contraction in healthy tissues. In the treatment of old standing diseases of joints, their use may be said to be almost essential.

Douches are frequently employed under water, while the patient is immersed in the bath, and by this means local stimulation of muscle and joints can be accomplished in a very effective manner. This process is called "wet-douching," the ordinary douche receiving the name of the "dry douche" in contra-distinction. This terminology is not very happy, but it appears to be generally employed.

COMPOSITE BATHS.—In the practical application of thermal treatment it will be recognized that we more often than not require several distinct bathing processes to form a "complete bath," and in our illustrations we represent the various appliances which it will frequently be found necessary to use in combination.

Our illustrations are from photographs taken at the Thermal Establishment at Bath, which in the number and variety of its appliances, is the most complete in the world, and as all the more important methods of applying water in use at the various European spas have been precisely reproduced here, no place is better suited for the study of this branch of therapeutics. The civic authorities offer every facility to medical practitioners desirous of acquainting themselves with the practical application of baths.

Fig. 11 represents the arrangement for the application of sprays and douches to the rectum, vagina, and in disorders when we require to act upon the pelvic circulation.

At the front of the bath there is a powerful horizontal douche for the vagina ; from the bottom a vertical douche for the rectum ; and from the sides a circular spray, which is impacted against the lower part of the abdomen and back. There is also a spray from the back of the bath which acts upon the dorsal regions of the spine. Each of these can be used separately and graduated to any temperature during the course of the bath. Above there is a shower bath, by which powerful stimulation to the back may be made at the termination of the bath, and at the side a graduated spray, by which an equable temperature to the whole body may be maintained during the process.

In cases when we wish to use powerful cold stimulation to the pelvis, we can increase its general effect by applying at the same time a spray to the rest of the body at a high temperature. By this means we can also increase the capacity of the patient to undergo more prolonged local treatment at one sitting.

The combination of needle-bath, descending douche and spray

(*Fig.* 6), is another useful combination, the needle-bath being used to govern the circulation of the general cutaneous surface, while the spray and douche are used to produce local effects upon the part requiring special treatment.

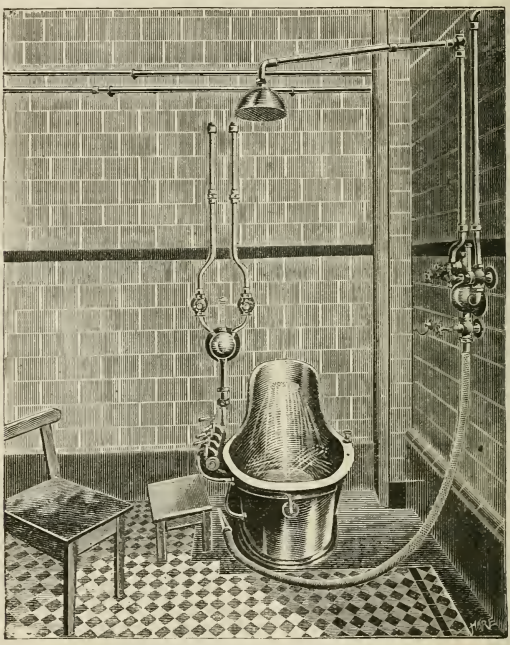

Fig. 11.

Fig. 3 represents a reclining bath, which is fitted at one end with a spray-douche for the lower part of the back (this is not seen in the illustration), while it is immersed in the water. The douche (which is shown lying in the bath), is also intended for application under the water to any part of the body which may be required. The spray, which is

shown coming from a small cistern, is used for the purpose of graduating the temperature of the patient after the bath, the object of the cistern being to break the force of the water, so that only the thermal

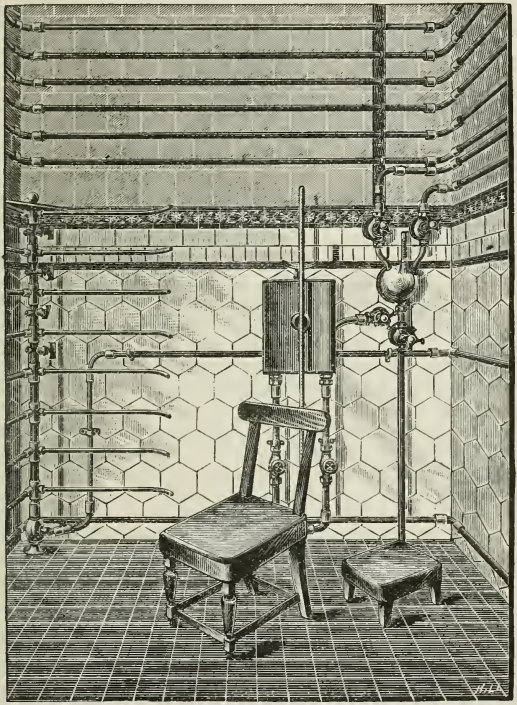

Fig. 12.

effect, and not the stimulation of impact, is obtained. Above the bath is a shower, for use when we wish to produce active stimulation as a part of the cooling process.

A portion of a bath-room, shown in *Fig.* 12, illustrates an appliance

for producing powerful thermal effects along the course of the spinal column. In this room, the temperature of the air can be raised to any degree which may be necessary, so that the condition of the cutaneous surface can be regulated without the employment of a spray to other parts of the body. This room also contains a vapour bath, which is not shown, and in the corner there is a needle-bath, so arranged that only the lower extremities need be exposed to the impact, although it is equally serviceable to the whole body.

The combination of douche and "massage," which is much employed both at Aix-les-Bains, and at Bath, is illustrated in *Fig.* 2. Here we have similar principles to those involved in other composite baths we have mentioned. The general temperature is controlled by the graduated spray, or by the air of the room, while local effects are produced by powerful douches; but here these are aided by frictions and manipulations at the hands of the attendants. This is a most useful form of bathing, both for improving the general condition of the patient and for disorders causing impairment of the functions of joints and muscles; but the word "massage" must not be understood to mean that it takes the place of the steady and long continued manipulations, which are necessary to remove deposits and thickening about the joints, and which require to be performed during a much longer period of time than the patient usually remains in the bath.

We have mentioned these forms of composite baths by way of illustration. The possible variety is infinite, and in over a hundred rooms, which this Thermal Establishment possesses, there are hardly two which are precisely alike in their appliances, and which have not some special adaptation to individual cases. While such variety is convenient, it is not essential. It has been our object throughout this article to show how much can be done either without apparatus or with appliances of the most simple description. Nothing will take the place of the skill on the part of the physician, and no branch of therapeutics so readily puts it to the test.

In thermal treatment there is no question of recommending special forms of baths for particular diseases, but of selecting that method of producing the physiological action which may best serve to control or alter the condition which affects the health of the patient.

Electro-Therapeutics:

By A. D. ROCKWELL, A.M., M.D., New York.

THE medical and surgical relationships of electricity are so extensive that it is impracticable to give more than a brief survey in a work of this character. For all information, indeed, in regard to the physics of the subject, its physiology, and the many diseases in which it is being constantly used with success, as well as the technique of electrical applications, the reader must necessarily be referred to the various text books that are now readily accessible.

The writer proposes simply to dwell upon some points of this interesting subject, that in its more general consideration in former issues, were either overlooked or not sufficiently emphasized.

Before alluding to special diseases, it may not be amiss to speak of some general underlying principles in regard to the therapeutic action of electricity—which seem in danger of being quite forgotten in many quarters. Whether the word *tonic* should be dismissed from the vocabulary of medicine as some have asserted, need not here be seriously discussed. But admitting that the word has a recognized significance, and that remedies for improving the tone of the system still hold an important position in the classification of the Materia Medica, then electricity may be rightfully claimed as a tonic of a very high order.

It possesses varied influences of this kind, according to the method of its application, and therefore may be indicated in a multitude of symptoms, and for conditions apparently most diverse in their origin and character.

He who only uses electricity in local pathological conditions, and exclusively for its local effects, will fall far short of eliciting its full therapeutic power. It is this appreciation of the broad therapeutic action of electricity, and a knowledge of the details of the general methods of application necessary for its production, that has been the secret of success of so many charlatans. They have accomplished results along certain lines far more satisfactory than those scientific physicians who have restricted their excursions in electro-therapy to purely localized methods of application.

Electricity, then, after the method of general faradization, may be said to be indicated whenever a constitutional tonic influence is called

for. This law renders the remedy even more valuable to the general practitioners of medicine than to the specialist. For the long period of convalescence following typhoid or typho-malarial fever, there is no remedy that is comparable with it, and in almost any condition where a constitutional tonic influence is indicated, electricity in some one of its forms, and by some one of its methods of application, is likely to be of more or less service. It gives passive exercise to the muscles, it promotes and renders more natural the processes of excretion and secretion, it corrects circulatory disturbances, in a word it imparts tone, strength, to both nerve and muscle. With these general principles before us, we cease to wonder that electricity is used and recommended in such a wide variety of diseases, many of them of an apparently opposite character, and we see the injustice of that criticism which condemns electricity because it is claimed to be good for so many different affections. Just as quinine, which is not a specific for any disease, unless it be chills and fever, is yet used freely as a tonic in an indefinite number of diseases, so electricity, which is not a specific for any one disease, is yet used with good results in any number of diseases where local or general nutrition is impaired and needs to be improved. The indications for the use of electricity are wider than the indications for the use of quinine, for the threefold reason that it has a powerful sedative action, its stimulant or tonic effects are more decided, and its effects—sedative, stimulatory, or tonic, can be confined mainly to certain organs, nerves, or muscles, or be distributed through the whole body, as may be thought necessary. While the consensus of opinion among those who have had any adequate experience in the use of electricity is, that it is occupying a position of growing importance, there are yet, very naturally, honest differences of opinion in regard to its efficacy.

At a meeting of the New York Academy of Medicine, March 21, 1889, the question was discussed by various members who had given much attention to the subject. Dr. M. Allen Starr, in a paper on the "Physics and Physical Action of Electricity," concluded: (1,) Static electricity offered nothing more than the interrupted galvanic current, and failed to furnish those effects which were most desirable in the treatment of disease. (2,) The constant galvanic current could produce chemical changes which aided nutrition or destroyed tissue according to the strength employed. (3,) The constant galvanic current could transfer medicines into the body from without. (4,) The interrupted galvanic current or faradic current could excite various organs to functional activity. (5,) It was questionable whether the pathological state causing organic diseases could be

in any way influenced by electricity. (6,) If functional diseases were benefited, it was in an uncertain manner, and the physiological indications for the agent were as yet uncertain.

Dr. L. C. Gray, in a paper on the effects of "Electricity on Central Nervous Diseases," claimed it to be an efficient remedy in relieving sub-acute mania, melancholia, the insanity of doubt, and functional insanities, but only in the period of convalescence, not in the acute stage. Of the gross cerebral diseases, it might be said that it was useless to administer electricity in brain tumours, meningitis of traumatic, epidemic, or aural origin, or in facial hemiatrophy. It was a useful adjuvant in intracranial syphilis, in the early stages of headache and insomnia, and sometimes in the later stages following hemiplegia. Hemiplegia due to neoplasm and meningitis was omitted from treatable cases. If the molecular changes induced by chronic endarteritis of middle age, or of nephritis, or by emboli, were such as not to lead to a fatal issue in case of hemiplegia, they could usually be favorably influenced by electricity when the primary symptoms of shock had thoroughly passed off. Meningitis of traumatic origin, if slight, might be benefited by electricity, or if hemiplegia of vascular origin were not followed by contracture, it could also usually be thus benefited.

Dr. W. R. Birdsall read a paper on the "Effects of Electricity on Spinal-Cord Diseases." He admitted as truthful the doleful picture of the therapeutic effects of electricity in spinal-cord diseases, which Dr. Starr had drawn, only in so far as it applied to other remedies as well. Too much should not be expected of this agent in a class of diseases which were incurable. He had never seen a case of organic disease of the spinal cord cured by electricity; but he went further, and stated that he had never seen such a case cured by any single therapeutic agent whatever. But for the relief of symptoms he had seen electricity serve a more useful purpose than any other. And, as a rule, in this class of affections we attempted only to follow symptomatic indications, as the relief of pain, anæsthesia, spasm, paralysis, trophic changes, symptoms which were the result of a variety of diseases of the spinal cord and its membranes. It might be laid down as a rule that in acute inflammatory affections of the cord electricity was not beneficial and might prove injurious. It use should be restricted to non-inflammatory affections. This led to the question, What were the effects produced by electricity? It was essentially a stimulant, an exciter of living tissues.

In therapeutic application we could not expect to find the distinctive effects of the cathode and anode as observed when electricity was applied to an isolated nerve. We did, however, know the effects of

these agents on nerve-tissue, even more definitely, he thought, than we knew the effects of drugs. He believed a large part of the beneficial effects of electricity were indirect or reflex. The very fact that one could produce a strong muscular contraction, or sensory impression, by static electricity showed that it was an agent of decided force. In this connection the question of influencing the spinal cord or deeper structures naturally arose. He agreed with Dr. Starr that, by the ordinary method of applying the electrode to the back, a very feeble impulse was obtained in the cord, yet he believed that the cord could be excited in that way. All the tissues between the two electrodes which had a resistance not greater than that which the electro-motor force would overcome transmitted the current according to the ratios of their resistance. He believed, however, that the main benefit obtained from electricity in spinal-cord diseases was due to the peripheral impression.

The chief benefit which he had observed was in enabling the patient to recover more rapidly from partial paralysis than he would without electricity. Also in infantile paralysis improvement had taken place under galvanism in cases which had previously been at a stand-still. Paralysis from myelitis, also facial paralysis and lead palsy, had improved under electricity, chiefly galvanism.

Dr. E. D. Fisher read a paper on the "Effects of Electricity in Functional Nerve Affections." The reader alluded briefly to the theory of the action of the agent in these cases, but said he quite agreed with Erb, who had expressed the view, that we might as well do away with the bromides and arsenic in functional nervous diseases because we did not understand the theory of their action, as to abandon electricity because of our ignorance of the laws underlying its influence. Undoubtedly galvanism was more important as a remedial agent in functional nervous diseases than was static or faradic electricity; yet, with regard to static electricity, he would say that in his opinion it should not be so positively discarded as it had been by Dr. Starr. Especially in neurasthenic cases did it have a stimulating and pleasing effect. It was in functional diseases, with error in nutrition, and not organic troubles, that static electricity found its field of usefulness.

The writer, in a paper on "Electricity in Peripheral Nerve Lesions," referred as an illustrative type to facial paralysis. He concluded that Electricity sensibly hastened recovery in curable cases, and defined the class that most appreciated the influence of the current. In cases of facial paralysis caused by a neuritis within the bony canal, with the consequent swelling and compression of the nerve fibres, electricity was of little, if any, use. Its greatest service

was rendered when that portion of the nerve external to the fallopian tube was mainly affected. While admitting that electricity possesses only a limited range of usefulness in severe lesions of either the central or peripheral nervous system, he thought it was one of the most efficient remedies we possess for the relief of the various symptoms associated with these lesions, while, for the removal of the finer nutritive disturbances that underlie many persistent neuralgias the **Galvanic Current** was certainly a remedy of the greatest value.

But whatever good is accomplished by the current in arresting degenerative processes in nerve and muscle, it must be through attention to the details of methods of application.

Years ago his attention was called to the irreparable injury that may accrue from sudden galvanic shocks in certain cases of paralysis.

These observations were made more especially in the essential paralysis of childhood, but are equally applicable in cases of peripheral paralysis ; and therefore in any case of this type, where there exists either marked decrease or increase of electro-muscular contractility or irritability, and especially where we have associated the characteristic "reactions of degeneration," it is far better treatment to avoid frequent interruptions of the current, the effects of which are undue stimulation, and in their relation to nutrition destructive rather than reconstructive.

The continuous passage of the galvanic current, while in a certain sense stimulating, combines influences that are sedative and tonic and pre-eminently reconstructive ; and whatever power this agent possesses in resisting progressive degenerative changes in nerve and muscle, it is more by its continuous passage and the induction of those cumulative effects that come from current reversal without shock than the ordinary method of slow or rapid interruption.

Ascites.—Faradization of the abdominal cavities in ascites has been found successful by Muret in two cases occurring in Kussmaul's clinic, and it is confirmed by Kaufman, whose observations resulted favourably in ascites due to disturbance of the portal circulation in liver troubles, or diseases of the spleen, peritoneum, or in pericarditis ; but not when the ascites formed a part of a general dropsy. The application offers more success when made immediately after paracentesis, because at the time the muscles may be brought into active contraction. The object aimed at is a thorough massage of the abdominal muscles, of ten to fifteen minutes' duration, repeated twice daily.

Abdominal Organs, Electrical Applications to the.—Von Ziemssen found that either form of the electric current, when applied

externally, will excite local contractions of the abdominal organs and increase the secretion of the various glands.

From these experimental results, which he supports with a series of successfully treated cases, he recommends that the stomach should be treated by the electric current over the cutaneous surface of the organ; that the electrode should be large, varying from 600 to 500 square ctm. (12 inch by 8 inch); that it should be applied half an hour before a meal; after this a dry faradic brush should be brought over the skin frequently. The electric application should not be continued as long to the chest and spine as to the abdomen.

The application of electricity to the bowels is undertaken in the same manner with large electrodes, one of which should cover the whole area of the under surface of the abdomen, while the other electrode should be applied to the posterior surface over the spine. The strength of the current must correspond with the size of the electrode, which should be about 600 square ctm. The subjective effect of the electric treatment acts the same way in the bowel as in the case of the stomach by invigorating and improving the appetite. In the bowel it diminishes or removes the painful tenderness in the lower part of the body as well as the feeling of movement and heat that is frequently experienced. The objective effect of this treatment Ziemssen conjectures to be that the stimulation of the motor nerves excites the intestinal ganglia, and thereby increases the flow of secretion from the glands of their internal surfaces, as well as induces a flow of pancreatic and bile secretion. Among the affections of the bowels, where the above therapeutical agent may be considered to have a beneficial influence, are:—Defective innervation, atrophy of the muscles of the bowels, digestive atony, and that wide section of diseases comprehended under the name of hypochondriacal and neurasthenic. The latter he believes to be, purely and simply, a weak nerve state of the bowel, which interrupts the normal peristaltic action, and frequently leads to local areas of peritonitis. In conclusion, it may be assumed that these methods of treatment can only be carried out with any hope of success in institutions where skilled nurses are in constant attendance, where the treatment of massage may be advantageously combined with galvanic treatment.

Electric Cataphoresis.—Dr. Frederick Peterson concludes from his experiments in this direction that the cataphoric action of the constant current is beyond question. His own experiments were chiefly with cocaine and aconitine.

With the former, or with the two combined, a deep anæsthesia may be produced in conjunction with the anode, sufficient for the relief of

pains in superficial nerves, or for small operations—such as the painless removal of cutaneous growths, or the electrolysis of hair roots.

The anæsthesia may be made rapid by the use of strong currents—an advantage in neuralgias—or slowly produced with a current imperceptible to the patient. Wherever and whenever the anode is employed for the relief of pain, its efficacy will be greatly increased by moistening it with a ten to twenty per cent. solution of cocaine. Rubbing the skin with a little alcohol or chloroform, to remove the oil globules previous to the application, will hasten the effect.

Cocaine cataphoresis is particularly of benefit in neuralgias of the trigeminus and its branches.

If volatile solutions are used, evaporation may be prevented by the employment of a tight-fitting, bell-shaped, soft-rubber cap, adjusted over the end of the electrode.

The law should not be lost sight of, that the amount of electrical osmosis grows with the resistance of the fluid acted upon. Hence the enormous resistance of chloroform adds to its cataphoric power.

In none of the experiments with cocaine or aconitine did any excoriation or other injury to the skin follow, but occasionally there was slight scaling of the epidermis. There were of course no constitutional effects. He would suggest the use of electric cataphoresis for other purposes than that of producing topical anæsthesia. Wherever, for instance, iodine is used as a local application over swellings or tumors, the galvanic anode will greatly add to the efficacy of the medicament.

Esophthalmic Goitre.—In the treatment of Esophthalmic Goitre the **Galvanic Current** is a remedy far more effective than is commonly believed. Some cases are in no way affected favourably by its use, but in the majority of cases more or less amelioration of the symptoms become manifest after a few applications, while a very respectable number either decidedly improve or approximately recover. The cases presented before the New York Neurological Society by the writer, and subsequently published in the *New England Medical Monthly*, September 15th, 1888, are striking examples of the efficiency of the galvanic current. One of the cases was exceptionally severe, the pulse for two years having been seldom less than 140 and frequently reaching 160. After some seventy applications the pulse was so reduced that it seldom exceeded 75 or 80 in frequency, the goitre almost completely disappeared, while the eyeballs showed but slight abnormality.

Prostate, Hypertrophy of.—Dr. Roux, of Lausanne, employed the galvanic current in the treatment of hypertrophy of

the prostate. He has used the method in six cases and claims to have obtained even better results than Casper. His procedure is as follows: A broad electrode is applied to the abdomen. The other, which consists of long needles varnished to within 12 to 15 millimeters of the point, is introduced into the prostate through the rectum. At the beginning of the application a weak current is employed, but in one to three minutes this is gradually increased, until the desired maximum is reached. Roux uses currents up to 70 milliampères, which are applied for two and a half to five minutes in this strength, and then diminished, while the needles are withdrawn and inserted into another part of the prostate. No special disinfection is required, since Roux regards the galvanic current itself as a sufficient disinfectant.

Extra Uterine Pregnancy.—The treatment of extra uterine, or more specifically tubal pregnancy, by electricity, is a subject of the greatest interest, and were it a condition at all frequent, it is safe to say that no therapeutic procedure of the century would take precedence in point of importance or renown. But as it is a somewhat rare occurrence, the general interest taken in it is comparatively slight, and the exact knowledge of the method to be employed is limited to a few.

If this misapprehension as to the details of the operation might be considered strange, in view of the frequency with which it has been described, and the gratifying success that invariably follows, we cease to wonder at it, when we find that many, who ought to be better informed, labour under the same lack of definite knowledge.

It has been alluded to many times, both in speech and written contribution, as an electrolytic process, and at a late meeting of the American Gynæcological Association, no less an authority than Apostoli advocated electro-puncture for the destruction of the fœtus. Now, as it is possible to effectually destroy the fœtal life by a much simpler method, and one entirely unattended with danger to the mother, why resort to something more complex, and by no means unattended with hazard? The great merit of the proper method of procedure is its simplicity, and this method should be emphasized and reiterated, again and again, until no physician, whether he lives in the midst of medical progress, or in remote regions, shall remain in ignorance of it. We will then briefly describe the process, so that every physician can readily avail himself of a therapeutic means by which tubal pregnancy is now rendered as harmless as it was formerly dangerous. The earlier the diagnosis of tubal pregnancy, the greater the probability of success, for should the sac, containing the fœtus,

rupture, which it is liable to do any time after the third or fourth month, electricity has no power to save. In any case of extra uterine pregnancy which has advanced much further, say to the fifth or sixth month, while electricity might destroy the fœtal life, nature would certainly encounter far greater obstacles in encysting and in finally absorbing the remains than at an earlier period.

Both the galvanic and faradic currents have been used successfully. We prefer and recommend the galvanic, for these reasons :

(1,) Because the four important effects that attend the passage of electricity through the living body are mostly associated with the action of galvanism. Its physical, chemical, and physiological effects are far superior to those of faradism, while it possesses mechanical effects equal at least in potency. Chemical or electrolytic effects are, indeed, almost wholly the result of galvanic action, and as these effects start a process that continues long after the current ceases to flow, it is clear that it must be far superior to faradism in aiding nature to absorb the fœtal mass.

(2,) We prefer it again because in the thirteen cases that the writer has treated, it has in every instance but one, quickly destroyed the fœtal life and saved the mother, with the infliction of little, if any pain. In the one exception referred to, the treatment was attempted too late, for the symptoms pointed unmistakably to a slight previous hæmorrhage.

The diagnosis in these thirteen cases was either originally made or confirmed by such eminent authority in gynæcology as Drs. T. Gaillard Thomas, T. Addis Emmet, H. Marion Sims, Charles McBurney, J. E. Janvrin Bache Emmet, C. C. Lee, Everett Herrick, and A. H. Goelet.

The diagnosis having been clearly made, and the position of the mass accurately located, one electrode (the positive) consisting of a flat and flexible metal back (three inches square) covered by two or three layers of absorbent cotton, well moistened, is placed firmly on the abdomen and directly over the distended tube. The other electrode, consisting of a metal ball, about the size of a large marble, securely fastened to an insulated stem, is introduced into the vagina, and guided to the point where the enlargement is most distinctly felt.

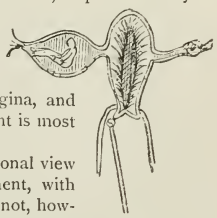

Fig. 13.

The accompanying cut represents a sectional view of the vagina, uterus and tubal enlargement, with the internal electrode in position. It does not, however, perfectly illustrate the close proximity in which

the internal electrode can be brought to the fœtus itself, nor the concentration of current that can be utilized.

The treatment is by interruptions, and these interruptions may be rapid or slow, according to the susceptibility and temperament of the patient. We find that slow interruptions, say about twenty to the minute, are more agreeable to most patients than the more rapid method of a hundred and over to the minute.

The strength of the current is important, but for reasons dependent upon conduction and temperament, it is impossible to name a measurement that will suit every case. It is important, for the self evident reason, that if too weak it will fail to destroy the fœtus, and if too strong it may prove dangerous. More especially should care be exercised when pregnancy has advanced beyond the third month. The tube may then be distended to such an extent as to render spontaneous rupture imminent, and the possibility of hastening this catastrophe in the attempt to destroy the life of the fœtus should never be lost sight of. The tubes themselves are but slightly supplied with muscular fibre, and the danger would mostly arise from the powerful compression liable to be exerted by the abdominal muscles; the efforts should be therefore, so to diffuse the current proceeding from the external pole, by means of an electrode of large size, as to call forth the slightest muscular contractions possible. Currents varying in strength from twenty to forty milliampères should be used. Thirty milliampères would be as strong as ordinarily required.

We cannot so accurately gauge the strength of the faradic as we can the galvanic current, and therefore when the former is used, the operator is to be entirely guided by the effects, taking care not to cause too violent contractions of the abdominal muscles, yet administering all the patient can endure without marked discomfort.

Gynæcology.—The treatment of uterine fibroids and other diseases of women by the use of currents of high potential, according to methods first suggested by Apostoli, has been written up quite fully in former issues of the "Annual," and therefore need not be considered here at length. There have been, however, some improvements in the matter of appliances to which the writer calls attention. In making applications to the vagina, there has always been more or less danger of cauterization in the use of very strong currents applied through the ordinary absorbent cotton or chamois covering. Dr. A. Goelet claims to have satisfactorily overcome this objection. In place of the usual ball electrode, the negative pole consists of a small, flat, copper disc, covered with a thick layer of potter's clay. After this has hardened so as to remain in position, it is covered with a thin layer of

absorbent cotton, and around this is secured a piece of gauze. (See also "Uterine Electro-Therapeutics.")

The completed electrode may then be kept constantly moist, so as to be instantly ready for use. When applications are to be made the electrode is covered with an additional layer of absorbent cotton. This protects the permanent covering and keeps it clean and fresh. With electrodes thus prepared currents as high in strength as 150 milliampères may be used upon the surface of the vagina and body of the uterus without fear of injury. When it is taken into consideration that it is the interpolar action that we have to depend upon in some of these conditions, it is of importance to concentrate the highest intensity permissible upon the structures to be acted upon. For use with the positive pole a disc of carbon instead of metal is used. In preparing the positive pole for internal use, the carbon is first covered with a layer of plaster of Paris, then with the clay, etc. If high intensities are employed, it is well to take the precaution to dip the electrode in a solution of bicarbonate of sodium. This neutralises the acid which collects at the surface of contact with the positive pole, and prevents the usual caustic action. It is claimed also, that while the negative pole is the more caustic with an unprotected metal or carbon electrode in the uterus, the positive pole is the more caustic, with the protected electrode, used in the vagina.

Another practical advance in the way of economy, is the substitution of intra-uterine electrodes, made of steel, treated by hydrogen, which renders them absolutely non-corrosive and non-attackable by acids. The cost of this form of electrode is very much less than similar ones made of platinum.

Dr. Martin enumerates a few conditions where pain is often the predominant symptom, in which galvanism, in strong doses, will prove an infallible and prompt remedy:

(1,) Do not advise the removal of any ovary for persistant pain, until galvanism has been systematically and thoroughly applied, if any of the following conditions are suspected as a cause: (*a*) chronic ovaritis, either with or without hypertrophy; (*b*) where inflammatory deposits, either with or without adhesions, surround one or both organs; (*c*) ovarian neuralgia; (*d*) all pain coincident with menstruation; (*e*) in all cases of ovarian pain not known to be the result of active, acute inflammation, septic or specific inflammation, and cystic tumours.

(2,) Galvanism is a sure remedy for all pain resulting from tubular diseases, except when septic or specific inflammation is the cause, or the presence of pus is demonstrated.

(3,) Galvanism is positively indicated in dysmenorrhœa or other

pelvic pain, when a result of chronic metritis; a result of hyperplastic enlargement of the uterus; or a result of fibrous or other non-malignant growths of the uterus.

(4,) Galvanism is emphatically indicated in pelvic pain when a result of old pelvic exudates of all kinds, provided acute inflammatory action is absent and the presence of pus is not suspected or demonstrated.

(5,) Galvanism is indicated in pelvic pains, arising from reflex disturbances, or hystero-neuroses, the condition well defined by Engleman as "a phenomenon which simulates a morbid condition in an organ that is anatomically in a healthy state."

(6,) Galvanism is indicated in dysmenorrhœa, when the result of cervical lacerations, with unyielding cicatrized plugs; when the result of cervical endometritis or uterine vegetation.

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UTERINE ELECTRO-THERAPEUTICS.

Skene Keith, M.B., F.R.C.S.E.

The treatment of fibroid tumours of the uterus by electricity, not by electrolysis, as Dr. Apostoli's method is often erroneously called, has attracted much attention during the past year, and numerous papers have been written and cases reported from various parts of the world. The most important contribution has been from Dr. Bigelow, and the book contains an introduction written by Dr. Apostoli, who says that he repeats, for the hundredth time, that "electro-therapy up to the present time has for its sole ambition the symptomatic cure of the patients, and the parallel, but limited, retrogression of the fibromas."

Dr. Bigelow has brought together a number of opinions, favourable and unfavourable, and, on the whole, the opposition has not been so vigorous as it was, except in private. Several cases have lately come under my observation, where desperate attempts have been made to prevent patients trying this treatment.

Although an admirable description of Dr. Apostoli's treatment appeared in the "Annual" a couple of years ago, it is perhaps necessary to describe it again, for a great distinction must be drawn between Dr. Apostoli's treatment, and treatment carried out by many; and resembling it, simply, in the fact that a battery is used. For example, we have a patient under our care who was treated unsuccessfully by electricity—a pad was placed on either side of the abdomen, and the

current passed between them ; and this is not the first time that we have known of Dr. Apostoli's treatment being carried out in this manner !

The aim of the treatment is to cure the patient ; in other words, to make the woman feel well, in spite of her tumour. A living woman, in perfect health, with an inert uterine fibroid, is of more interest than a dead woman after hysterectomy. Excessive menstrual loss is arrested, pain is relieved ; all the symptoms which the tumour gives rise to are done away with ; the growth of the mass is stopped ; and, in addition, the size is reduced one-half or one-third. Few tumours disappear entirely, though it is possible that we will get this result more often when patients come early for treatment.

The apparatus required is not costly. It consists of a battery of thirty or forty large Leclanché cells, placed in a cool room or passage, so as to prevent evaporation of the liquid. The zinc or negative pole of one cell is joined to the carbon or positive pole of the next, with the result that a free zinc and a free carbon are left at either end, and constitute the negative and positive poles of the battery. Wires attached to these poles are brought into the consulting room. One is fixed to one side of the commutator—*i.e.*, an instrument by which we can change the direction of the current without unfixing any wires or screws. The other is fastened to the rheostat—*i.e.*, the instrument by which the strength of the electrical current is increased or decreased. A water rheostat consists of a tube filled with a weak solution of a salt, say sulphate of copper, and closed at the foot by a metal plate, to which one wire from the battery is attached. A movable glass rod, containing a wire exposed at both ends, plays up and down in the tube. When it is drawn up, the lower end of the wire barely touches the water ; as it is depressed the strength of the current will be increased until the wire touches the metal plate, when there will be no interruption in the metal conductor. The free end of the wire above passes to the galvanometer and thence to the commutator. The circuit is completed by two wires passing from the commutator to the patient. Instead of using a rheostat and thus having only two wires coming off from the battery, a couple of wires may be led from each cell to a collector. As the handle of the collector is passed from one screw to another, a cell is let into the circuit until all the cells, or as many as may be required, are in action. A very convenient portable battery, with collector attached, is made by Gaiffe.

The electricity is brought directly to the patient by means of the large clay abdominal pad and by the sound which is passed into the uterine cavity ; or the needle which punctures the tumour from the vagina. The abdominal pad is made large, as the skin is a bad con-

ductor, and also, because there would be much pain, or even destruction of the skin, caused by the passage of a strong current of electricity through it at one spot.

For the carrying out of Dr. Apostoli's treatment, it is essential that one pole be situated in the uterus or in the tumour, otherwise we cannot be certain that any current passes through the diseased organ.

Having then the apparatus and a patient, what is to be done? The woman is to be placed in the lithotomy position and the vagina washed out with an antiseptic lotion. If the case be one where there is hæmorrhage, the internal electrode, consisting of a piece of carbon one inch in length, and as thick as can pass into the uterus, connected to an insulated stem, is attached to the positive wire and inserted into the cavity. The pad of sculptor's clay, six by eight inches or so in size, is attached to the negative wire, placed on the abdomen and held there by the patient. The passage of the current often causes no pain, and the patient should not be allowed to bear more than she can with moderate comfort. The internal electrode is to be passed over as much of the uterine surface as possible. As a rule, the sitting lasts for five minutes. At a first sitting, the strength of the 'positive' should not be more than 100 milliampères. The action is a double one. There is a local caustic action on the uterine lining membrane, set up as one of the effects of the electrolysis, which must ensue when a current is passed through a compound body; and, secondly, there is the action of the current while it passes through the tumour.

When hæmorrhage is not a symptom, the negative pole will, as a rule, be connected to the internal electrode. With the negative, one has to be careful, and 100 milliampères would be too strong a dose to begin with. After the application the vagina is again to be syringed, and a pad of antiseptic gauze may be placed in it.

When it is impossible to pass a sound into the uterine cavity, and when the tumour can be reached from the vagina, a puncture is made directly into the mass. For negative punctures a fine steel needle is used; for positive, gold must be employed. The needle is fixed in a handle, and insulated by a sheath of celluloid to within half an inch of the point. The best spot for the puncture is behind the position of the cervix, and where no vessel is to be felt. Special attention must be paid to the antiseptics when a puncture is made. The patient ought to rest for some time before going home, and must be careful to avoid cold.

The treatment is repeated twice or thrice a week, and it will be found that, as a rule, from twenty to thirty or thirty-five applications will be required. The number will depend, in great measure, on the strength of the dose the patient is able to bear, and also on the length

of time the tumour has been in existence. Delicate women, or those who have been much exhausted by discharge or pain, should have the treatment in their own beds. They thus avoid the risk of cold, and most undoubtedly gather strength more quickly.

Every case of uterine fibroid appears to be amenable to this treatment; and the worse the case, the better is the result; probably there is most room for improvement in such cases.

Few precautions need be taken. On the day of the application it is best to keep fairly quiet. On the intervening days the patients live their ordinary lives, and may, especially towards the end of the treatment, go out to dinner or to the theatre, as if there were nothing the matter.

The result often does not come at once. Indeed, quite a number are, at first, worse instead of better, though the majority begin to improve from the very commencement.

It is not necessary that there be a tumour; a big, subinvoluted uterus, giving trouble, can be treated in the same manner with success.

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Part II.—NEW TREATMENT.

A Dictionary of New Treatment in Medicine and Surgery, 1890.

ABDOMINAL INJURIES. *A. W. Mayo Robson, F.R.C.S.*

Abdominal injuries may be considered under four classes: *(a,)* Simple concussion; *(b,)* Visceral lesion without external wound; *(c,)* Penetrating wound without visceral injury; *(d,)* Penetrating wound with visceral injury.

For differential diagnosis and treatment see "Annual," 1889.

Dr. Thomas Morton, of Philadelphia, has collected two hundred and thirty-four cases of abdominal section for traumatism, with a general mortality of 58·97 per cent. Analyzing the causes of death, he found that in forty-three it was due to peritonitis owing to delayed operation; in sixteen it was due to peritonitis arising after operation; in eleven to overlooked perforations; and in four to inefficient suturing of wounds; three died upon the table; ten immediately after leaving it; and forty within twelve hours. In eighteen cases abdominal section was performed, and no intra-peritoneal injury requiring treatment found; two of these patients died. Analyzing the nature of the injury and the consequent mortality, he found one hundred and ten gunshot wounds, showing a mortality of 67·2 per cent.; seventy-nine stab-wounds, with a mortality of 39·2 per cent.; twenty-seven cases of ruptured bladder, with a mortality of 62·9 per cent.; and eighteen cases of ruptured and contused intestine, with a mortality of 88·8 per cent. Resection of intestine was performed seventeen times in fifteen cases, with but two recoveries. He believed that these, as well as many other figures, would be greatly improved by the employment of Senn's methods of intestinal anastomosis and suture. Senn's hydrogen test was used in eleven cases; it proved the presence of wounds in eight cases, and their absence in two; in the other case it failed to reveal perforations. He thought that every case under fair surroundings, where penetration could be proved, ought to be opened and searched, as well as cases where there were reasonable grounds

for diagnosing rupture of the bowel or bladder. He suggested that hydrogen insufflation might be useful as a test of rupture of the bladder.

In the "Lancet" for June 1st, 1889, page 1009, is a reference to Mr. Crofts' case of successful resection of ruptured intestine, which is the first instance of recovery after laparotomy for ruptured bowel without external wound.

In the "Nashville Jour. of Med. and Surg." for May, 1889, is a noteworthy paper by Dr. C. S. Briggs, who arrives at the following general conclusions :—

(1,) That laparotomy for traumatism should be resorted to in the majority of cases in which the existence of visceral injury is clearly established, the exceptions being such instances as from the great extent or necessarily fatal character of the wound, the possibility of recovery is absolutely precluded.

(2,) That where doubt exists as to the presence of gastro-intestinal lesions, Senn's insufflation method should be employed.

(3,) That the median incision is best adapted for laparotomy in these cases, except in penetrating wounds received from behind or where it is evident that one of the immovable viscera has been injured at such a point as to render the necessary examination impossible through the opening provided by the median incision.

(4,) That inspection of the abdominal contents should be thorough and painstaking, even at the risk of added shock by prolonged search, though expedition in this, as well as in other parts of the procedure, is certainly to be recommended.

(5,) That while it is unquestionably necessary for speedy repair in the approximation of visceral wounds to unite serosa to serosa, multiplied stitching is to be avoided, inasmuch as the nature of the reparative process in this class of wounds does not require such intimate closure, the advantage to be obtained thereby is more than counterbalanced by the loss of time, and a great number of stitches in itself constitutes an element of danger.

(6,) That the continuous suture is the best adapted for nearly all intestinal wounds, as it is the simplest, the most quickly made, and can be used in such a manner as to possess all the advantages of the Lembert suture.

(7,) That when wounds with great loss of substance, or closely placed multiple wounds are met with, Senn's approximation method by intestinal anastomosis may, when better understood, be substituted for resection, now considered necessary in such complications.

(8,) That the peritoneal toilet should be carefully made, and that the

penetrating wound of the abdominal wall should be closed with as scrupulous regard for the care of the peritoneal injury at that point as at the wound in the median line.

Dr. T. A. McGraw, of Detroit, has collated the literature of gunshot wounds of the intestines, and has made a number of experiments upon animals, from which, as well as from his own experience of the accident in the human subject, he has deduced certain opinions. He considers that bullets which enter the abdominal cavity pass in a nearly absolutely straight line from the orifice of entrance through the peritoneum to that of exit, or to their final stopping place in the viscera. The author is inclined to think that the whole doctrine of balls glancing from soft tissues is a fable founded upon imperfect observations and wrong deductions. An incision made directly in the course of the ball will give the shortest route to the injured parts. Senn's hydrogen-gas insufflation should be used with great caution after the lapse of a few hours, since it might burst open spontaneously agglutinated wounds and make general a peritonitis which had become circumscribed. The dangers of an operation for penetrating gunshot wounds of the abdomen are directly in proportion to the length of the operation and the amount of evisceration. The operation may be shortened: *(a,)* By strictly limiting the examination of the viscera to such of them as may have been in the course of the ball; *(b,)* By suturing wounds in the gut, whenever it is possible, instead of excising them, the latter severe operation being reserved for wounds that do not permit inversion and suture; *(c,)* By omitting all operative measures, even suture, in all wounds which have become so occluded by plastic material that they are impervious to the contents of the bowel; *(d,)* When many wounds occur near together, by operating first on those wounds which imperatively demand it and leaving to the last those which may recover without operation; *(e,)* By never eviscerating a patient except, first, when hæmorrhage is extensive and uncontrollable, or, second, where there is evidently a discharging wound which cannot otherwise be found. In cases of gunshot penetrating wounds of the abdomen, in which patients may be evidently too weak to endure the radical operations for the repair of their injuries, efforts may be made to give them relief by operations of less severity. For treatment of injuries to particular viscera, see "Stomach," "Spleen," etc.

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ABDOMINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

For surgery of abdominal viscera, refer to articles "Abdominal Injuries," "Anus Artificial," "Bladder," "Colotomy," "Gall Bladder," "Hernia," "Intestinal Obstruction," "Intestinal Surgery," "Laparotomy," "Liver," "Pancreas," "Peritonitis, "Stomach," "Spleen," and "Vermiform Appendix."

ABORTION. *John W. Taylor, F.R.C.S.*

This is generally due to syphilis, kidney disease, accident, or artificial induction by drugs or instruments. For the treatment of threatened abortion **Rest,** small tonic doses of **Ergot** when there is hæmorrhage, or the use of **Viburnum Prunifolium** (grs. ij. of extract in pill three times a day), give usually the best results. **Chloral** in combination with **Bromide of Potassium** or **Sodium** is specially useful for urgent nervous symptoms. If abortion is due to syphilis this must be treated continuously with **Mercury** and **Iodide of Potassium.**

When may it be necessary or good practice for the surgeon to induce Abortion or Premature Labour?—(*a*) In cases of pelvic deformity; (*b*) In some cases of co-existing tumour; (*c*) In kidney disease, where there is much albuminuria, retinitis, or uræmic convulsions; and (*d*) Occasionally in vomiting and chorea, when these are rebellious to all milder measures. The most usual and the simplest method of performing this operation is to pass an absolutely new gum-elastic or celluloid catheter or bougie within the uterus, and let it remain there until labour results. The labour is frequently terminated in from thirty-six to forty-eight hours after the introduction of the bougie. In some cases it is advisable to pass the bougie under anæsthesia.

For incomplete abortion, when a portion only of the uterine contents have been evacuated and hæmorrhage continues, the best treatment is to give **Ergot** for one week, and if this is without result, to promptly clear out the uterus with a dull curette or spoon. The cervix is generally sufficiently dilated to do this without special preparation. If not, it may be necessary to adopt one of the methods of dilatation of the cervix previous to operating. (See "Uterus, dilatation of," "Annual," 1889.)

What relation is there between Neuralgia and Abortion?—Dr. Leith Napier has drawn attention to the fact that neuralgia and abortion are frequently associated, neuralgia being the first symptom in many

cases, and nerves remote from the uterus being often affected. If the pain be promptly relieved no abortion follows. The trifacial, occipital, and cervical nerves are most affected, but brachial, intercostal, lumbar, and sciatic neuralgias are also met with. If the patient be anæmic, **Quinine** (with Tinct. opii. ♏j) is advised as an immediate sedative and **Liq. Arsenicalis** recommended when the attack is over. If the patient be plethoric or gouty, **Chloride of Ammonium** and **Bromides** are the most suitable remedies.

Reference.—"Edin. Med. Jour.," Feb., 1889.

ABSCESS AND FISTULA IN ANO. *Herbert W. Allingham, F.R.C.S.*

Fistula is most frequently met with during middle age, but occasionally occurs in quite young children. Abscess, ending in fistula, may arise from the following causes: injuries to the anus, very costive motions, straining at stool, or by foreign bodies swallowed, and exposure to wet or cold. The predisposing causes are a scrofulous diathesis and certain depraved conditions of the blood. Fistula in children always results from the presence of worms, or from injury to the anal region. Fistula in the majority of cases begins by the formation of an abscess immediately beneath the skin, just outside the anus; it is usually said to commence in the ischio-rectal fossa, but this, I am sure, is the rarer of the two situations. In phthisical patients it usually commences by ulceration of the mucous membrane of the rectum.

Rectal abscesses may be either acute, chronic, or gangrenous, the last named being the most dangerous, as leading to very extensive death of the tissues. As soon as pus is formed the abscess must be at once *freely* laid open, for any delay causes the matter to burrow, and so greatly increases the risk of a fistula. As soon as the abscess is opened, the cavity is syringed out and carefully filled with wool soaked in 1 in 20 carbolic oil. This should be removed the next day and the abscess cavity allowed to fill up from the bottom by being *lightly* dressed with wool soaked in **Lot. Rubra, Lot. Nigra,** etc., or some ointment, as the conditions of the wound may indicate. Should the abscess fail to heal, the probability is that a fistula has formed. It may be of one of the three following varieties, complete, blind external, or blind internal. In the complete fistula a probe will be found to pass straight into the bowel, the internal opening in the majority of cases being situated in the interval between the internal and external sphincters, and not some distance up the bowel, as is generally supposed. The blind external has only an external opening; the blind internal only an internal opening.

No fistula should be left long, as the opening may become blocked up, a fresh abscess form, and further burrowing ensue.

The blind external is the safest to leave, and may occasionally be cured by injecting a strong solution of **Carbolic Acid** or **Nitrate of Silver** into the sinus, taking care to keep the aperture well open. The further this kind of fistula is from the anus, the better chance is there of effecting a cure by the above treatment. If this fails, an operation will be necessary, as in the next two conditions. In complete, the blind internal fistula, operation is always necessary. A director must be first passed through the main sinus, and that thoroughly divided; then a search must be made for any lateral sinus or sinuses, for unless they also are laid open, a cure of the fistula will not be brought about. All over-lapping pieces of skin should be removed.

In operating upon women, if a sinus is near the perinæum, cut as little as possible, for anything like too free incisions in that situation may lead to incontinence of fæces.

The careful after treatment of these cases is important. The wound should be cleansed every day by syringing with a weak solution of **Condy, Sanitas** or **Carbolic Acid**. It should then be dressed with wool soaked in **Olive Oil,** or some lotion as **Black Wash, Red Wash, Weak Carbolic Acid, Sulphate of Copper,** etc. The wounds must not be stuffed, but only lightly dressed.

Fistula in phthisical patients should be treated according to the conditions of the chest trouble. In acute phthisis the sinus should not be completely laid open, but the external orifice enlarged to relieve pain.

In chronic phthisis, where the lung trouble is quiescent, judicious treatment is called for, that is to say, the choice of a good time of the year, a sea side place, and the patient must not be kept in a recumbent position too long after the operation.

Fistula in children, caused by worms, may be frequently cured by getting rid of the worms.

REFERENCES.—Longe, "Thérap. Gazette," Jan., p. 35, 1889; Kalsey, "New York Med. Record," Feb. 16, 1889; Allingham, "Diseases of Rectum," Edit. v. 1888.

ABSCESS OF BRAIN. (See "Brain.")

ABSCESS OF THE LUNGS. *Frank J. Wethered, M.D., M.R.C.P.*

The success which has so far attended the treatment of abscess in the lungs by operation, constitutes the latter a legitimate departure of surgery.

Pulmonary abscesses are rare sequelæ to acute pneumonia, but occasionally after recovery from an advanced stage of the acute disease the clinical signs of them may be found, and they are of grave

significance; for all their ways of healing, whether by absorption, or by breaking into a bronchus, the pleura, the pericardium, the liver, or externally, are dangerous. This has led surgeons to attempt to evacute them by thoracocentesis.

Two recent articles on this subject, one by Dr. Spillmann and Dr. Haushalter in the "Rev. de Med.," and the other by Dr. Quincke in the "Berl. Klin. Woch.," deserve attention. The former authors have collected ten cases, in all but one of which pneumonotomy was done. Seven of the patients were cured in a time varying from four to eight weeks after the operation, and a fistulous opening persisted in two cases only. Of the three other cases operated upon, one was benefited by the operation, but died suddenly four weeks afterwards; the other died in twelve days in a state of collapse. In the authors' case, after the withdrawal of one and a half drachms of pus, about half a drachm of glycerine and iodoform was injected into the abscess cavity. This set up violent cough, and the patient died on the following day in a state of collapse.

Quincke reports two very interesting cases occurring in his own practice. They both followed attacks of pneumonia. The abscess in each case was opened, resection of the ribs being performed. Both patients made a good recovery. Quincke lays great stress upon the necessity of producing inflammatory adhesion between the two layers of the pleura, before making an attempt to open the pulmonary abscess.

The author speaks hopefully of this form of treatment in cases of pulmonary tubercular abscesses. Of course, the cases would require to be selected. They would need to occur in persons who otherwise were enjoying fair health, in whom the abscess cavity had formed slowly, and in whom the surrounding lung tissue was comparatively healthy.

The diagnosis of the exact position of the abscess by physical signs was often difficult, and an exploratory puncture was generally used, and found of considerable value.

We think that the author over-estimates the dangers of cutting through the non-adherent pleura in order to reach a pulmonary abscess. No one will deny that an adhesion of the two layers of the pleura is very much to be desired, but it seems to us that to wait for the production of such an adhesion four or five weeks, in a case attended with hectic symptoms, expectoration of fœtid purulent sputa, is bad practice, and diminishes the chances of restoring the patient to health.

The more common method in England in treating these abscesses

has been to open them freely, if at all, and to wash them out with some antiseptic. This the authors first named regard as too likely to induce hæmorrhage, and they prefer a slow entery into the lung by the thermocautery, after the superficial tissues have been cut, and no injection subsequently, but possibly the insufflation of antiseptic powder.

Abscess of the Lung and Empyema.—Mr. T. Pridgen Teale, reports six cases of abscess of the lung and empyema, three of which were connected with the liver, and concludes thus :—

"Certain points bearing upon the surgery of the chest seem to be unfolding themselves to our view.

"(1,) We are losing our fear of exposing the pleura and the lung, just as we have learnt step by step how to deal boldly and safely with the peritoneum.

"(2,) The evil of admission of air into the pleural cavity is not the mere exposure of the pleural surface to the air, is not that the lung collapses by the mere admission of the air, but that, where there is a fairly healthy lung and pleura, the inrush of air reduces to a serious extent the mechanical power of the thoracic wall over the function of inspiration.

"(3,) That in cases in which this mechanical difficulty threatens the life or impedes the recovery of the patient, surgery must decide upon the best method of closing the wound to the inrush of air, whilst allowing adequate drainage of any pus cavity to be carried on.

"(4,) That the region of the diaphragm is a situation in which abscess amenable to surgical treatment frequently occurs, such abscesses often commencing below the diaphragm, and tending to discharge through the diaphragm and through the lung.

"(5,) It seems probable that such abscesses can be more safely attacked through the lower angle of the thorax, provided there be dulness at the seat of puncture, than through the abdominal wall.

"(6,) As to washing out the cavity of a large pleural, or pulmonary, or hepatic abscess, it is probable that antiseptic washing is of value in the early period, whilst the cavity is offensive ; but that, as soon as the secretion has become sweet, washing is not only unnecessary, but tends to disturb the comfort of the patient and retard his progress. If drainage be effective, so that fluid does not lodge, the fluid, which is sweet when secreted, should escape from the cavity before it has time to deteriorate.

"(7,) As to the question of excision of portions of rib in treating empyema, on this point I am unable to speak from personal experience. The tendency of surgical opinion seems to be rather to

reserve it for special and exceptional cases than to make it a general rule of practice."

REFERENCES.—Spillmann and Quincke, "New York Med. Jour.," Dec. 8, 1888; Teale, "Brit. Med. Jour.," Oct. 13, 1888.

Synopsis.—(Vol. 1889, p. 27.) **Calcium Sulphide**, gr. $\frac{1}{100}$ to $\frac{1}{2}$, the small dose tending to check, the large to hasten suppuration.

ACCIDENTS. (See "Injuries.")

ACNE. *W. Allan Jamieson, M.D.*

ACNE VULGARIS.—This is met with especially during youth and early adult life, and its management is hygienic, dietetic, and therapeutic. All influences which may have been or are still operative in the direction of lowering tone in the system in general or in the parts in particular—commonly the face and back—must be eliminated and corrected. The proper care of the skin is an essential factor, and the impaired condition of the sebaceous glands may be modified by the use of baths. Tepid or cold plunge or sponge baths should be regularly taken every morning, followed by friction with a rough towel. Exercise, short of undue fatigue, must be indulged in. It is convenient to recognize two forms or stages of the disease—the irritable and the indolent (G. H. Fox, "New York Med. Jour.," July 6, 1889). The irritable is largely reflex in origin, due to disturbances of menstruation and of digestion. In the indolent variety, vascular excitability is not present, but glandular obstruction is the more prominent feature. The irritable form needs soothing locally; in washing all strong soaps are to be avoided and undue friction dispensed with. The indolent class of cases demands vigorous local treatment, and especially thorough cleansing of the skin by means of soap and warm water, the promotion of excretion from the plugged gland ducts by pressure and local massage, aided by hot steaming and douching. These processes are best accomplished at night, as thus the skin has time before morning to recover from the irritation unavoidably occasioned. Comedones may be partially expressed by means of a watch key, or by the use of one of the numerous instruments invented for this purpose. Too many should not be dealt with at one time, and there is no need entirely to evacuate the inspissated sebum; it is enough to start the comedone. The dietary in acne should be nutritious; in many cases there has been too rapid growth, and the functional activity of the hair system has proved a strain on their power of production. Thus the diet must be liberal and varied, containing a free allowance of fats, which is best assimilated when taken in conjunction with the other ingredients composing the meals. The action of the bowels

must be kept regular. **Sulphate of Magnesia** or **Soda,** or both, with **Sulphate of Iron** and **Sulphuric Acid,** as in Startin's well-known mixture, forms one of the most suitable aperients when the diet alone is insufficient. Locally, such remedies as are efficient in procuring mild exfoliation from the surface of the skin, thus keeping the orifice of the sebaceous glands free, constitute the most reliable applications. **Sulphur** holds the highest place among such, and can be employed in powder, lotion, or ointment, the two latter being usually the best. Isaac ("Berl. Klin. Woch.," No. 3, 1889) combines naphthol with the sulphur :

℞ Naphthol	10 per cent.	Green Soap	20 per cent.
Precip. Sulph.	50 per cent.	Vaseline	20 per cent.

which is to be spread on the face and left on from half an hour to an hour. This is followed by some redness of the face and scaling. It is to be repeated till all the skin peels off. If too much reaction takes place the use of the paste is to be discontinued and the face powdered or anointed with a mild ointment. In obstinate cases the following is commended :

℞ Powd. Chalk	5 per cent.	Vaseline	10 per cent.
β-Naphthol	10 per cent.	Green Soap	15 per cent.
Camphor	10 per cent.	Precip. Sulph.	50 per cent.

Resorcin also is excellent, and is used in twenty per cent. strength in Lassar's paste. When the acne papules are small they can be caused to abort by touching each with pure liquid **Carbolic Acid,** immediately afterwards painting on some flexible **Collodion.** If large or indolent they must be incised, Kaposi's acne lancet being the safer to employ. Free scraping the surface with the dermal curette, as a preliminary measure, is often useful. After this procedure the face should be well douched with hot water, and then the appropriate ointment or lotion applied.

Acne Rosacea.—In this, the grade of the disease and the degree of irritability of the skin must be taken into account. The more nearly the case resembles an eczema, the less stimulating the treatment; the more closely to acne vulgaris and the more oily and thick the skin, the more freely may stimulating applications be employed. As a general rule the most useful local remedy is **Calamine Lotion,** to each four ounces of which a drachm of **Precipitated Sulphur** has been added. This can be freely painted on at night after bathing the face with very hot water for three or four minutes and carefully drying. In the morning the face, after washing with tepid water (soap is usually deleterious), should be dusted with **French Chalk,** to which 2 per cent. of **Salicylic Acid** may be added. In obstinate cases **Vlemingkx's**

Solution, one-eighth or one-fourth its customary strength, may be painted on at night, and the same dusting powder applied in the morning. Constitutionally, all derangements of menstruation and digestion require attention. The hot vaginal douche benefits some, **Ext. Salicis Nigræ** in half-drachm doses is of advantage in other cases, and **Ergot** is of value where there is menorrhagia ; **Permanganate of Potass** where the opposite state obtains.

Acne Variioliformis.—This occurs later in life than acne vulgaris. It chiefly attacks the forehead, and may extend among the hair. The pustule resembles a pock, and the scab which forms is due, according to Boeck ("Arch. für Derm. und Syph.," 1 Heft, 1889), to a species of mummification *en masse* of the epidermis and part of the cutis. It yields best to scraping, followed by the application of **Black Wash** and an ointment of **Carbonate of Zinc** with a little **Salicylic Acid.** Internally, a mixture of **Acetate of Potass, Nux Vomica** and **Rumex** seems to suit well. Rosenthal, however, treated a case successfully with an ointment containing **Resorcin** and **Boric Acid,** of each two parts ; **Vaseline,** twenty parts ("Archiv. für Derm. und Syph.," 1889, Heft 1).

Synopsis.—(Vol. 1889, p. 144.) ℞ Ung. Zinc Benzoat., lxxxvj parts; Sulph. Præcip., x parts; Silicious Earth, iv parts, Ft. Pasta., apply at night, and the following lotion by day: ℞ Resorcini, ij to v parts; Glycerini, j part; Aq. Aurant. Flor., xx parts; Alcohol, lxxx parts; M. Ft. Lot. ℞ Sulphuris, Hypochlor., ʒj ; Adip. Benzoat. ʒj. M. Ft. Ung. ℞ Sulph. Præcip., ʒj to ʒjss; Glycerini, ʒj ; Sp. Vin. Rect., ʒss ; Aq. Ros. ad ʒiv. M. Ft. Lot. Apply at night after steaming the face. ℞ Liq. Potass, ʒj ; Aq. Ros. ad ʒiv, M. Apply on soft sponge night and morning if skin appears greasy. ℞ Tinct. of Witch Hazel, ʒss ; Sp. of Lavender, ʒj ; Potash or Soft Soap, ʒij ; Alcohol, ʒiv, M. ; to stimulate indurated spots. Saline aperients.

For Pustular Acne, **Calcium Sulphide,** gr. $\frac{1}{10}$ to $\frac{1}{2}$ (p. 27).

Acne Rosacea.—**Alkalies, Bismuth, Soda, Nux Vomica,** and the **Mineral Acids.** *Locally*: **Sulphur Preparations.** ℞ Camphorated Alcohol and Præcipitated Sulphur āā gr. xxx ; Distilled Water, gr. ccl, M. apply in the evening and remove with hot water in the morning. **Vleming'kx's Solution** (Quicklime, ʒij ; Sulphur, ʒiv ; Water, ʒxx ; boil in an iron vessel until ʒxij remain, stirring with a wooden spatula to a perfect union then filtering) j part to water, ʒiv. Besmir uses **Hamamelis** and **Ergotin** internally for vascular dilation of face. ℞ Plumb. Acet. gr. x ; Zinc. Acet. gr. x ; Aq. Ros. ʒiv. Ft. Lot. ; apply on muslin for an hour or two night and morning.

Acne Variioliformis.—Ol. Morrh. and **Iron** internally ; also Pot. **Iodid.** alternately with mild **Mercurials** in syphilitic cases. *Locally :* **Sulphur Preparations.**

ACROMEGALY. *F. de Havilland Hall, M.D.*

This affection, as its name indicates, (τὸ ἄκρον, the extremity ; μεγάλος, large,) is an excessive growth of the extremities, in which the head usually participates, and it may be looked upon as a partial giant-

growth. M. Marie suggested the name "acromégalie," though a few single cases have been described in earlier times. The pathological process in acromegaly is not confined to the bones, but extends also over the soft parts. The view that cartilages and adipose tissue are principal factors in this condition is erroneous. The affection has a certain similarity with myxœdema, but differs from it in the fact that in the latter the bones are never involved. It has also some points of resemblance with osteitis deformans. Prof. Freund believes in a certain relation between this affection and the sexual apparatus, all the more as the most pronounced phenomena of acromegaly appear to coincide with the period of puberty. Virchow, however, doubts the existence of such relations. There seems to be an hereditary element in the disease.

In all the recorded cases in which special attention was directed to the point, the thyroid gland appeared abnormal.

In this country cases have been shown by Mr. Rickman Godlee, Dr. Hadden, Mr. Ballance, and Dr. Saundby.

REFERENCES.—Rickman Godlee, "Clin. Soc. Trans.," vol. xxi., p. 196; Hadden and Ballance, *Ibid.* p. 201; Saundby, "Brit. Med. Jour.," 1889, vol. ii., p. 597; Fraentzel, "Deut. Med. Woch.," 1888; "Therap. Gaz.," Feb. 15, 1889.

ACTINOMYCOSIS. *F. de Havilland Hall, M.D.*

Attention was directed to this subject in the "Annual" for 1888, p. 117, but much additional light was thrown on the morphology of this remarkable fungus by a demonstration furnished by Prof. Crookshank, at a meeting of the Royal Medical and Chirurgical Society in February, 1889. The patient, a boy aged nine, was admitted into the Brompton Hospital, under Dr. Douglas Powell, for an insidious illness of four months' duration, attended with hectic symptoms, slight cough, and painful swellings on the right side of the chest. He was of a somewhat tubercular family history, and the son of a dairyman. The physical signs simulated those of empyema, or pulmonary cancer. Exploration for empyema proved fruitless, but subsequent incision into the lower swelling resulted in the removal of some semi-solid matter mingled with blood, which, on examination, proved to be degenerated tissue teeming with the ray fungus. The small opaque granules found in the thick yellowish discharge are very characteristic. When placed under the microscope each granule is seen to be composed of numerous club-shaped bodies lying either in a rosette-like colony, or scattered about separately. Dr. Wethered finds that a much better idea can be obtained by staining cover glass preparations by the method of Grain, counterstraining by eosin. In

spite of some singular differences, there is little doubt that the bovine and human disease are identical, the differences depending upon the "poly-morphism" of the fungus. Dr. Acland pointed out that whereas in Germany, in the specimens described, most stress has been laid upon the radial arrangement of club-shaped bodies, the English observers on human actinomycosis have often failed to detect these bodies, but have described a delicate, thread-like mycelium as the most constant feature. In Dr. Powell's case both the mycelium and also the club-shaped rays were detected, and a direct connection was demonstrated to exist between these two constituent parts of the fungus. Prof. Crookshank suggests that the characteristic "clubs" are really the organs of fructification of the fungus. Dr. Markham Skerritt described a case he had observed in the General Hospital at Bristol. He thought it probable that we should find, on close examination, that actinomycosis was much commoner both in men and cattle than was at present supposed. ("Lancet," 1889, vol. i., pp. 328, 341, and 1034.)

AGUE. (See "Intermittent Fever.")

Synopsis.—(Vol. 1888, p. 118.) **Liq. Arsenicalis, Quin. Sulph.** in xx or xxx gr. doses before paroxysm, or divided doses of v gr. thrice daily. If stomach does not tolerate it, small doses subcutaneously (using Neutral Sulphate to avoid ulceration) or larger doses in enema.

AIR-EMBOLI.

Synopsis.—(Vol. 1889, p. 146.) **Nitrite of Amyl** inhaled.

ALBUMINURIA. *Robert Saundby, M.D.*

Among the causes of intermittent albuminuria Dr. Ralfe assigns an important place to "over-study combined with anxiety, which is fostered by the present competitive system;" he also says that "albuminuria in a child with elongated prepuce has been cured by circumcision;" albuminuria dependent upon constipation he regards as being due to the toxic action of re-absorbed fæcal products, the urines of such patients often containing an excess of indican and oxalate of lime. ("Lancet," Nov. 26, 1888.)

Dr. Ralfe thinks that it is of importance to note the relation of the quantity of fluid ingested to the quantity of urine excreted, as in functional albuminuria this relation follows the ordinary physiological law, while in chronic interstitial nephritis the polyuria "does not depend upon the amount of fluid ingested, but on the degree of arterial tension." This last statement is not quite accurate, as the polyuria is greater by night than by day, when the arterial tension is not at its maximum. The polyuria in contracting kidney is due to the co-operation of several causes, viz., the increased blood pressure,

general and local, increased activity of the glomerular epithelium, stimulated by the presence of urea, urates, etc., in the blood, and increased permeability of the glomerular walls. But this does not detract from the value of the diagnostic point to which Dr. Ralfe directs attention, viz., that polyuria, in excess of the fluid ingested, is met with in contracting kidney, but not in functional albuminuria." ("Lancet," Nov. 24, 1888.)

Albuminuria in Life Assurance.—At the Leeds meeting of the British Medical Association an important discussion took place on the prognosis of albuminuria in relation to life insurance. The subject was introduced by Dr. Pavy who, after stating the present position of insurance practice, which makes albuminous urine a definite ground for rejection, said the questions to be discussed were, whether there are cases of albuminuria which admit of being regarded as eligible for life insurance, and, if so, how they were to be distinguished from those of a graver nature. Albuminuria might occur of a transient kind, and of this there are three groups; (1,) Where traces only are found; (2,) Where the quantity is greater; (3,) Where the albumen is present at one period of the twenty-four hours, and absent at another, cases which he had called cyclic. It was obvious that there must be an absence of all evidence of Bright's disease, apart from the presence of albumen, to justify the question of acceptance of any given case being entertained. Excluding all these he would accept cases of the first and third groups, but would regard the second as doubtful and only to be accepted after prolonged observation. He insisted that in all cases of this kind something more than the ordinary insurance examination is required.

Dr. George Johnson maintained that albuminuria is always pathological. He would accept no case at ordinary rates, and the terms on which they might be accepted must depend upon the special circumstances of each case. Dr. Maguire thought cases of albuminuria without other symptoms of Bright's disease might be divided into two classes; (*a*,) With high tension pulse; (*b*,) With low tension pulse. The former should be rejected and the latter accepted, but only at an increased premium. Cases where the proteid was only globulin were less serious as a rule, but this did not serve to distinguish functional cases from those of organic origin. Dr. Pye Smith said that of course "functional" albuminuria was "pathological." Albuminuria like hæmoptysis was always serious, but did not always indicate organic disease, but even if it was "functional," with our present knowledge the case had better be deferred. Prof. Gairdner thought it was misleading to speak of "physiological albuminuria," but he accepted

the term "functional albuminuria," though his experience would lead him to say that albuminuria in all cases is a danger signal, requiring at least the postponement of the case. Dr. Rabagliati would accept cases of simple albuminuria where traces only are present, as lives having an average age at death of 57 years; this would mean rating up lives under 40 and absolutely rejecting those over 40. Dr. Drysdale would advise delay in any case. Dr. Saundby would accept those cases in which, together with the absence of all other evidence of Bright's disease, or gout or plumbism, the albumen was present only during exercise. He thought that other forms of albuminuria, too, might be innocuous, but were not easily defined; this class could be easily recognized and the step if taken would not, in his opinion, have to be retraced. He would not go so far as Dr. Pollock in his recent book on life insurance; where there was actual Bright's disease, a clever medical officer and an actuary might calculate the risk, but such business was speculative and one on which it was impossible to formulate rules. Where cases are deferred, it should be for six months, as shorter periods were useless and disappointing to the applicant. He strongly urged the importance of a uniform method of testing, claiming for boiling and acidulation with dilute acetic acid, a superiority over all other methods. ("Brit. Med. Jour., Aug. 24, 1889.")

The result of the discussion appeared to be, that the majority of those who took part in it were opposed to the acceptance of cases of albuminuria on any terms. Among those who wished to see certain cases of albuminuria regarded as eligible, there was some difference of opinion as to the cases that should be accepted, and considerable vagueness in defining any but the one group in which albuminuria occurs only after exercise and disappears when the subject assumes the recumbent posture.

The Significance of Peptonuria in Pregnancy.—Dr. Koetnitz ("All. Med. Cent. Zeit.") says that peptonuria in pregnancy indicates the death of the fœtus. This statement needs confirmation. The test for peptone is the formation of a pink colour with Fehling's solution in the cold. It is best to dilute the reagent.

Propeptonuria, or Hemialbumosuria, in Measles.—Propeptone, or hemialbumose, is known to exist in the urine in many diseases, in addition to osteomalacia, in which it was first found by Dr. Bence Jones. Thus it has been detected in abscess of the liver, septicæmia, hip disease, peritonitis, endocarditis, parametritis, spinal curvature, Bright's disease, and in the puerperal state. Dr. Loeb, of Frankfort, now writes that he has found it in the urine of nine patients with measles out of twelve cases of the kind in which

he examined the urine for it. The method of testing employed by him is as follows:—Sulphuric acid, added to the urine drop by drop, causes, if propeptone is present, a copious, white, flocculent precipitate, which disappears on heating, but re-forms if the liquid is allowed to cool. Acetic and hydrochloric acids will give a similar reaction. It must be remembered that an excess of acid will re-dissolve the precipitate; therefore it is necessary to be careful to add it slowly. As a rule, in the cases of measles examined, the reaction was obtained for about two days at the beginning of the affection, after the temperature had begun to go down, but before the rash had disappeared. Dr. Loeb found in several of his cases some enlargement of the liver, which he thinks may have some connection with the change in the urine. He also suggests that perhaps the skin affection is connected with the formation of propeptone, as it has been found in patients suffering from various affections in which the skin is implicated; thus Leube found it in urticaria, Ter-Gregoriantz in diffuse dermatitis, and Lassar was able to produce it in animals by rubbing petroleum ointment into the skin. Regarding the relation of propeptonuria to the condition which gives the so-called di-nitro-benzolic acid reaction, which is frequently found in typhoid, scarlatina, advanced phthisis, and other febrile diseases; Dr. Loeb has found that its presence does not always imply the existence of propeptonuria, though in many cases the former condition co-exists with it.

On the functions of the Glomeruli of the kidney: A Contribution to the study of Albuminuria.—J. G. Adami. The filtration theory of the glomerular function is inadequate to explain the undoubted selection effected by the glomerular wall, a result which dead animal membrane at any rate cannot produce. Thus, albumen always transudes in experimental filtration of blood serum through animal membrane. In the author's experiments where the renal arteries of the frog were ligatured and blood serum containing hæmoglobin in solution injected even under very low pressure, hæmoglobin was found in the capsular spaces, though no noticeable quantity of urine was secreted. Immanuel Munck, in his experiments with the extirpated kidney, found that the secretion was richer in chloride of sodium (20 to 67 per cent.), sulphate of sodium (45 to 74 per cent.), and sugar (60 to 90 per cent), than the blood serum passed through the kidney. The absence of albumen from normal urine is due to this selective function of the glomerular epithelium; and the presence of it in those cases called transient, functional, febrile, and toxic, is due to its derangement. ("Practitioner," April, 1889.)

ALBUMINURIC RETINITIS. *Robert Saundby, M.D., F.R.C.P.*

I have elsewhere pointed out ("Lectures on Bright's Disease," chap. vii.,) that there is nothing essentially incurable in the retinal lesions of chronic Bright's disease, but that their gravity is dependent upon their association with the later stages of an incurable disease. But even in such cases considerable improvement may occur under treatment; improvement affecting not only the anatomical appearances, but the function of vision. During the past year T. G., aged forty-three, painter, was admitted into hospital on April 6th, with loss of sight, headache and vomiting. He was a well marked case of chronic toxæmic nephritis, caused by lead. His eyes were examined on April 10th, and in both V. $= \frac{5}{\text{no type}}$; the appearance of the fundi is shown in the accompanying figure.

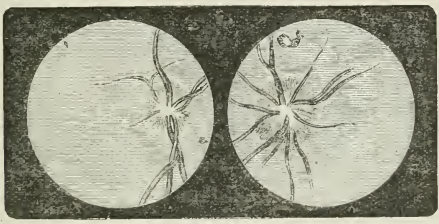


Fig. 14.

(*Fig.* 14.) Right eye.—Moderate (subsiding) neuritis; veins swollen; arteries obscured; a small hæmorrhage to inner side of disc; a fan-shaped area of degenerative spots radiating from the region of the yellow spot.

Left eye.—Intense neuritis with great swelling of the papilla; a small hæmorrhage above the disc; a few spots are arranged in short parallel lines near the yellow spot.

Under treatment his general condition improved; his headache disappeared and he became able to read; the optic neuritis shortly subsided. On May 20th his vision was again tested, right eye $= \frac{6}{6}$, left eye $= \frac{5}{10}$. By May 30th, the appearance of the fundi had greatly improved, as shown in Fig. 15.

(*Fig.* 15.) Right eye.—Swelling of disc diminished; inner edge of disc still woolly; many vessels have disappeared; the patches of atrophy are more extensive.

Left eye.—Swelling of disc greatly diminished; there is some

increase in the atrophic specks near the yellow spot, but those have lost their linear form.

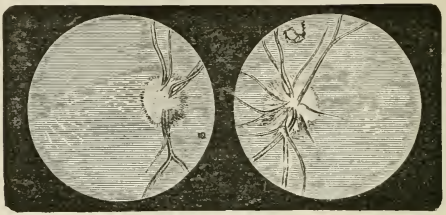


Fig. 15.

The improvement in vision has lasted up to the present time (Nov.), and appears to be dependent upon the disappearance of the neuritis. Why apparently equally intense neuritis should in one case be accompanied by more or less complete blindness and in another by no alteration of vision is not definitely known, but it is permissible to suppose that loss of vision only occurs when the fibres going to the yellow spot region become seriously involved in the inflammatory process.

ALCOHOLISM.

Synopsis.—(Vol. 1888, pp. 107 and 124.) **Withania Somnifera.** Extract in pills as hypnotic. *During Intoxication.*—**Pilocarpine,** gr. $\frac{1}{8}$ subcutaneously; **Caffeine; Cola Nut;** and strong Coffee as antidotes. *For Gastric Catarrh.*—**Oxides of Silver, Zinc** or **Bismuth; Arsenic** and **Nux Vomica** in small doses for morning vomiting; *Acute Alcoholic Mania.*—**Hyoscyamus; Strychnine** gr. $\frac{1}{30}$ sec. hor. hypodermically.

(Vol. 1889, p. 13.) In chronic cases **Amylene Hydrate** iijss grammes as hypnotic, especially if cramp cause insomnia.

ALOPECIA. *W. Allan Jamieson, M.D.*

Bosnier states that the falling out of the hair may be checked and a new growth started by the following treatment: The hair should be cut short, and a mild sinapism or rubefacient applied to the scalp; then every five days the following lotion is to be cautiously rubbed in, since it is an irritant and powerfully stimulates the hair:

℞ Acid Acetic and Chloroformi āā q.s. M.

At the same time the following pomade should be applied fresh every morning, the scalp having been first washed:

℞ Acid. Salicylici gr. xv. | Vaselini ℥v.
Sulph. Præcip. ℥jss |

Fatty substances, in his opinion, retard the growth of the hair ("Jour. de Med. de Paris, 1889).

Synopsis.—(Vol. 1889, p. 149.) **Ung. Sulphuris; Pilocarpine** ($\frac{1}{10}$ gr. of hydrochlorate or $\frac{1}{10}$ gr. of nitrate), hypodermically. **Ung. Chrysarobini** (3j to 3j of lard or 3ss to 3j of **Lanoline** and **Oil**) well rubbed in night and morning. ℞ Ol. Pini Sylvestris, 3j; Hyd. Perchlor, gr. ij, dissolved in Spirit, adding 3ss Ext. Capsici if Turpentine alone is not strong enough. ℞ Ol. Sinapis, 3j; Ol. Ricini, 3ij; Sp. Rosmarini, 3iv. M. Paint on with a brush once or twice daily. Blistering is useful, also repeated shaving round the patches. ℞ Sp. Vin. Rect. 3j; Tinct. Cantharidis; Tinct. Capsici āā 3ij; Sp. Rosmarini, 3j; Ammon. Fort, 3ij. M.

ALOPECIA AREATA. *W. Allan Jamieson, M.D.*

Opinions are still divided as to the nature of this disease, but all agree that local stimulation yields the best results.

Lassar ("Therap. Zeit.," Dec. 1888) recommends the following treatment: For the first six or eight weeks an experienced hand should thoroughly soap the scalp for ten minutes daily, using for this a strong tar soap. A good lather having been formed, it should be removed with an irrigator, using first lukewarm and then cold water. The cold douching will, after several repetitions, harden the scalp somewhat and prevent catching cold. After the scalp has been thoroughly dried the following lotion should be applied:

℞ Sol. Bichlor. of Mercury, 8 grs. to 5 ozs.	Glycerin 3ij 3v Cologne Water 3ij 3v

Then the scalp should be rubbed dry with **Alcohol,** ninety per cent., to which one-half per cent. of **Naphthol** has been added. The scalp now being freed from any fat whatsoever, the following is applied:

℞ Salicylic Acid 30 grs. Tincture of Benzoin 45 grs.	Neat's Foot Oil 3iij 3ij Mix.

This treatment carried out daily for some weeks will be followed with good results. Dandruff and itching will disappear. Hairs which are stiff and dry, become flexible and oily, and where no hair was, hundreds of small hairs will make their appearance. Of course, this only holds good when the hair growth is not destroyed. In very *obstinate cases* the following is worthy of trial:

℞ Carbolic Acid 15 grs. Sublimed Sulphur 75 grs.	Fat from a Horse's Neck 3jss Mix.

The author relies very much upon *Pilocarpin,* which he prescribes either in the form of an alcoholic solution or pomade:

℞ Mur. of Pilocarpin 30 grs. Vaseline 3v Mix.	Lanolin 3ijss Oil of Lavender 25 drops

That the addition of *balsam of Peru* to hair pomades takes the place of an antiparasitic is well known, and the following would make an

efficient though somewhat expensive pomade :

℞ Mur. of Pilocarpin	30 grs.	Balsam of Peru	ʒv
Mur. of Quinine	60 grs.	Ox Marrow	ʒiij
Precip. Sulphur	ʒijss		

Before applying the pomade the scalp should be thoroughly washed with soap and water and allowed to dry ; then the ointment should be applied, but it should not be left on too long before being again removed with soap and reapplied. **Tar** in the form of *tar baths* is also an excellent remedy as well as antiparasitic. ("Med. News," Feb. 2, 1889, p. 125.)

Bulkley regards nerve nourishment as most important. He increases the fats and phosphates in the dietary, and encourages largely the use of fresh butter, cream, etc. Milk should be taken in the intervals between meals. As medicines he relies most on **Strychnine** with **Phosphoric Acid,** given freely and persevered in.

Locally, the whole treatment is summed up in the single idea of stimulation of the diseased patches. While parasiticides are not actually called for by any local parasite present, experience has shown that many of the remedies used for this purpose are also of benefit in alopecia areata. **Bichloride of Mercury,** in a strength moderately to excite the skin, is frequently the best application ; but his preference is for **Veratria** in ointment, of a strength of five to ten or more grains to the ounce. **Croton Oil,** strong **Carbolic** applications, **Acetum Cantharidis, Capsicum,** and other stimulating applications may also be used with advantage. ("Med. Record," March 2, 1889.)

AMENORRHŒA. *John W. Taylor, F.R.C.S.*

Usually due to retarded functional development ("primary" amenorrhœa) or consequent to mental overstrain, anæmia, or other general impairment of health, as in early phthisis. It is often due to pregnancy, occasionally to chill, and is only very rarely due to mechanical obstruction or malformation.

Iron, Permanganate of Potash (gr. j. to ij. t.d.s.) or **Peroxide of Manganese** (gr. ij t.d.s.), and **Iodide of Potassium,** in steadily increasing doses (gr. v to x) are the drugs most satisfactory in their action. (See "Anæmia.")

Abdominal **Massage** and the **Faradic** (or **Interrupted**) **Current** are useful adjuncts to treatment.

Tinct. **Pulsatilla** (miv t.d.s.) is indicated in "primary" Amenorrhœa.

Tinct. **Aconite** (mj every hour) is indicated in acute arrest with pyrexia.

Iodide of Potassium and **Saline Purgatives** in chronic arrest with severe frontal congestive headache.

Cod Liver Oil and **Parrish's Food** in strumous subjects.

Change of Air and mental rest when amenorrhœa is due to mental overstrain.

Caulophyllum, Tinct. ♏ v to xx, either alone or in combination with **Pulsatilla**, has been specially recommended during the year. When milder measures have been previously tried and have failed, Dr. Duke advises the use of a *spiral wire stem-pessary*. This is stated to be self-retaining.

REFERENCE.—Davies, "Lancet," June 8, 1889; Duke, "Med. Press," June 29, 1889.

Synopsis.—(Vol. 1889, p. 149.) **Santonin**, grs. ij. before meals, in cases characterized by anæmia, chlorosis, and general depression; **Cimicifuga**, Tinct. ♏v to x, when molimina occur but catamenia are absent; **Sanguinaria**, *e.g.*, ℞ Tinct. Sanguin. Tinct., Nux Vom. āā ℥ij., Tinct. Aloes ℥ss. Sig. gtt. xx bis in die; **Megarthes Infus.** ℥ij. to vj., hot every morning; **Apiol**, ♏j to ij, night or morning, in suppression, in primary amenorrhœa, or when discharge is scanty.

(Vol. 1889.) **Aletris Farinosa** Tinct. ♏v to x (p. 150); **Cypripedium**, Tinct. ♏v to xv, or **Cypripedin**, grs. i to ij, if nervous debility and despondency exist (p. 46, 1888); **Guaiacum**, resin powdered, grs. x in milk every morning to promote flow (p. 55, 1888).

ANÆMIA AND CHLOROSIS. (See also "Obstetrics" and "Beri-Beri.")

John W. Taylor, F.R.C.S.

Four-fold treatment required :—

(1,) *Aperients.*—See "Constipation."

(2,) *Iron.* The most usually successful method of administration being in the form of "Blaud's Pills" :—

℞ Ferri Sulph.	gr. 2½	Sacchari	gr. 1
Pot. Carb.	gr. 1½	Tragacanth	gr. ½

Ft. pil. j. Two pills three times a day after meals.

(3,) *Regulation of Dress.*

Every constriction or compression of chest or abdomen to be absolutely forbidden. Therefore stays to be discarded and each skirt to be united with, or fastened to, a bodice, so that the weight is borne by the shoulders and not by the waist.

(4,) *Regular out-of-door exercise.*

Deep and full respiratory effort to be encouraged as an important form of "exercise."

Rebellious and inveterate cases may be due to—

(*a*,) Fæcal accumulation: Treatment, **Enemata** and **Abdominal Massage.**

(*b*,) Lead poisoning: Treatment, **Iodide of Potassium** and **Purgative Salts** ("*Mist. Alba.*").

(*c*,) Syphilis : Treatment, **Mercury** in small doses.

(*d*,) Tape-worm : Treatment, **Filix Mas or Kamala.**

(*e*,) Pernicious Anæmia : Treatment, **Arsenic** in increasing doses.

Liq. Arsen. ♏iij. to ♏xv.

Liq. **Arsenicalis** (♏iij to viij) is very useful in many cases of anæmia that are not "pernicious." If a case does not respond to iron, and there are no signs of gastric irritation, **Arsenic** may always be prescribed with advantage.

(Vol. 1889, p. 150.) For the palpitation of anæmia, ♏iij. thrice daily, of a 1% solution of nitro-glycerine is suggested.

ANÆMIA, PERNICIOUS (Conclusions as to the Nature of).

Dr. Hunter appends the following summary of his most important and laborious investigations into the nature of this disease : (1,) Pernicious anæmia is to be regarded as a special disease both clinically and pathologically. It constitutes a distinct variety of *idiopathic* anæmia ; (2,) Its essential pathological feature is an excessive destruction of blood ; (3,) The most constant anatomical change to be found is the presence of a large excess of iron in the liver ; (4,) This condition of the liver serves at once to distinguish pernicious anæmia *post-mortem* from all varieties of *symptomatic* anæmia, as also from the anæmia resulting from loss of blood ; (5,) The blood destruction characteristic of this form of anæmia differs both in its nature and its seats from that found in malaria, in paroxysmal hæmoglobinuria, and other forms of hæmoglobinuria ; (6,) The view can no longer be held that the occurrence of *hæmoglobinuria* simply depends on the quantity of hæmoglobin set free ; (7,) On the contrary, the *seat* of the destruction and *the form assumed by the hæmoglobin* on being set free are important conditions regulating the presence or absence of hæmoglobinuria in any case in which an excessive disintegration of corpuscles has occurred ; (8,) In paroxysmal hæmoglobinuria the disintegration of corpuscles occurs in the general circulation, and is due to a rapid dissolution of the red corpuscles ; (9,) In pernicious anæmia the seat of disintegration is chiefly the portal circulation, more especially that portion of it contained within the spleen and the liver, and the destruction is effected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract.

Dr. Russell, of Edinburgh, has made a series of observations which support the theory that there is increased blood-destruction in the liver, spleen, and even kidneys in cases of pernicious anæmia.

REFERENCES.—Hunter, "Lancet," 1888, vol. ii., pp. 558 and 608 ; Russell, "Brit. Med. Jour.," 1889, vol. i., p. 70.

ANÆSTHETICS. *Frederic Hewitt, M.A., M.D., Cantab.*

Some of the Chief Difficulties which may arise in producing general Anæsthesia.—A short acquaintance with the administration of anæsthetics is liable to produce in the administrator a tendency to discharge his duties in a perfunctory manner. A longer acquaintance with the subject not only produces an opposite tendency, but has the additional and satisfactory effect of causing the chloroformist to regard his task as one which involves a considerable share of responsibility. Very few cases pass through the hands of the watchful administrator which do not teach him something or another. Just as we find patients who exhibit the most remarkable differences with regard to opiates, alcoholic stimulants, tea, tobacco, etc., so we find that patients differ very widely in their behaviour under general anæsthetics. I do not propose, however, in this communication to deal with idiosyncrasies; in the present state of our knowledge of therapeutics it would be extremely difficult to deal with such a subject. I wish, on this occasion, more particularly to direct attention to some practical points, which seem to me to be worth consideration. I refer to the most common difficulties which may arise in establishing anæsthetic sleep by means of one or other of the three anæsthetics, **Nitrous Oxide, Ether,** and **Chloroform.** Difficulties, as we all know, may resolve themselves into dangers; but I do not propose in this paper to consider the dangers associated with the anæsthetic state. I would rather confine my remarks to difficulties which occasionally arise in the administration of an anæsthetic to moderately healthy as distinct from other patients. Given a patient whose general health is good, and given that he has to be anæsthetised by one of the three anæsthetics mentioned, what are the difficulties which the chloroformist may encounter; how may he anticipate their occurrence; and how may such difficulties be most appropriately removed?

(1,) *Difficulties associated with, or dependent upon, the Temperament or General Physique of the Patient.*—The self-possessed patient, generally speaking, is the best subject for an anæsthetic; but we must remember that very nervous or hysterical patients frequently assume an air of composure. In the early stages of nitrous oxide inhalation, hysteria may manifest itself; but in nine cases out of ten a few assuring words from the administrator will suffice. Very nervous people must be encouraged to breathe, whatever the anæsthetic may be. If ether be given by itself, that is, without being preceded by nitrous oxide, nervous and hysterical patients will usually be much frightened; it is in such cases that nitrous oxide acts so well as a preliminary to ether. Nervous patients inhale

chloroform well, if pains be taken to give the vapour very gradually and with plenty of air; but with these, as with hysterical subjects, the stage of excitement is frequently prolonged. This stage is, for obvious reasons, short with nitrous oxide; but if ether or chloroform be administered with plenty of air it is frequently pronounced, and, in the case of the last anæsthetic, demands great caution. If nervous or hysterical subjects become exciteable under nitrous oxide or ether, the anæsthetic may be unhesitatingly pushed; but this is not so with chloroform, which must be very gradually administered.

Full-blooded and short-necked patients require very careful handling, and the same may be said of those who are the subjects of extreme obesity. Difficulties are more especially liable to arise if air be not given in sufficient quantity. I am inclined to believe that in such cases as these the tongue, and parts about the superior aperture of the larynx, and possibly also the epiglottis and larynx themselves, become much more swollen than in sparely-built people. The tongue becomes visibly enlarged under nitrous oxide, under ether, and to a less extent under chloroform; and this is more particularly noticeable in plethoric patients. I shall discuss below the various causes which may come into play in producing a mechanical hindrance to respiration. I would only point out in the present connection that plethoric patients are most liable to this difficulty of breathing. In giving an anæsthetic to such a patient, stertor warns us of the possibility of difficulties arising; with nitrous oxide the face-piece must be removed, and with ether and chloroform care must be taken to give more air. Mr. Bailey's plan of putting a little mouth-gag—such as that used in dental operations—between the teeth of patients of this type is an excellent one, and may with advantage be followed, whether the operation is to be within the mouth or not. Although pushing the lower jaw forward from behind, pulling up the chin as recommended by Clover, or extending the head and neck, will usually cause the stertor of plethoric patients to subside, such manœuvres are not always successful; hence the necessity for keeping the mouth open so that the tongue may readily be grasped, or the finger passed to the back of the throat, to hook the tongue forward, should such procedures become advisable.

(2,) *Difficulties dependent upon or associated with, Incomplete Anæsthesia.*—Incomplete anæsthesia is frequently attended by difficulties in the administration. Coughing (dependent upon mucus in the throat, ether vapour, etc.) is the reflex expression of imperfect narcosis, and when coughing occurs, steps should be taken to get the patient more deeply anæsthetised. Coughing is usually preceded by swallowing; so

that, should the latter occur, the anæsthetic should be given to deepen narcosis. Coughing is chiefly inconvenient in abdominal surgery, but it is almost equally so in rectal, vaginal, or urethral operations. If a light form of anæsthesia be maintained, another difficulty, viz., vomiting is likely to arise. Vomiting, like coughing, is preceded by acts of deglutition; so that, if the administrator keep a look out for these, he will usually be able to avert the coughing or vomiting which would follow if he did not increase the depth of the anæsthesia. It is not always an easy matter to avert these difficulties, but by a little experience, the administrator will find himself able to do so in most cases.

In connection with these remarks it may not be out of place to refer to one of the most important points in connection with the administration of ether and chloroform; I refer to the necessity of keeping the patient's reflexes only just in abeyance. Thus, once having secured an abolition of the lid reflex (corneal reflex as it is often called) the administrator should occasionally allow it to return, and as frequently abolish it. This rule may also be applied to other reflex phenomena, such as swallowing, slight movement of the extremities, etc. It is not meant by this that the patient should be allowed to exhibit these reflex acts to any inconvenient extent; it is rather intended that the administrator should catch a glimpse of one or other of the reflexes occasionally. In certain operations (rectal, vaginal, etc.), in which very deep anæsthesia is necessary in order to abolish reflex movements when the parts mentioned are being manipulated, it will usually be found essential to maintain the absence of lid reflex throughout; for, if a lighter narcosis be produced, much inconvenient tonic spasm will be liable to arise during the operation. With nitrous oxide it is frequently impossible to prevent this reflex state, and hence in rectal surgery it is desirable to put the patient under ether, even for a brief operation, if perfect quietude be desired. Whenever very deep anæsthesia, free from all reflex phenomena, is demanded, ether is far better and safer than chloroform; for it is possible to proceed to the deepest anæsthesia with it, without the fear (which one would have with chloroform) of producing cardiac and respiratory depression. There are of course some cases in which it is best not to secure a deep anæsthesia, such, for example, as certain mouth or tongue operations with hæmorrhage; in these cases an occasional cough should be permitted, and even if the patient moves a little, the surgeon should not object. With this light narcosis, however, vomiting may readily arise—a point to be borne in mind. (See 4.)

(3,) *Difficulties dependent upon Habits of Intemperance, the excessive use of Tobacco, Morphia-taking, etc.*—Patients of this class

are bad subjects for anæsthetics. With nitrous oxide they frequently exhibit much cyanosis, tonic spasm, and a very short period of anæsthesia. In some cases no true anæsthesia occurs, but rather an analgesic state of short duration. Reflex phenomena (movement, lid-reflex, etc.) are difficult to abolish, whatever the anæsthetic may be. I have met with furious excitement under nitrous oxide in a gentleman addicted to chloral. The best way to anæsthetise these patients is to administer nitrous oxide in combination with ether, the quantity of the latter being regulated by the length of the anæsthesia required. If ether be given *per se* in these cases, much difficulty arises because the stage of excitement is prolonged; hence the value of nitrous oxide as a preliminary. Patients of this class are often fat or plethoric, so that the difficulties associated with the latter conditions become super-added. In passing from nitrous oxide to ether, care must be taken not to exclude air to too great an extent, and yet too much must not be allowed. One of the most difficult cases I ever anæsthetised was a full-blooded, strongly-built, thick-set naval officer, who smoked to excess. I gave him gas-and-ether on three separate occasions, at intervals of some months. On the first occasion I did not insert a mouth-gag before commencing, and soon after I had added a little ether to nitrous oxide, great embarrassment to respiration ensued. I opened his mouth with a Mason's gag with some difficulty and pulled the tongue forwards, which relieved the embarrassment. On the second occasion I inserted a little mouth-gag between his teeth before commencing. The same phenomena again showed themselves, but it was easier to cope with them. On the third occasion, still employing a small mouth-gag, such difficulty of breathing occurred that I was obliged to abandon ether and administer chloroform. I particularly watched what took place on this third occasion. Whilst adding ether vapour to the nitrous oxide, respiration became gradually impeded, purely from a mechanical impediment (see 4). I removed the face-piece directly I observed the embarrassment to be imminent; the tongue appeared greatly enlarged; breathing was becoming more and more difficult; I passed my finger to the back of the throat and could feel all the parts engorged; and the only thing which relieved the obstruction was forcible traction upon the tongue, which I then performed. No degree of head and neck extension, as recommended by Dr. Howard, would have corrected this difficulty; no pressure of the lower jaw forwards would have been beneficial; and the parts were so swollen at the back of the throat that I could hardly separate them with my finger. In the next section I shall more particularly refer to this difficulty in ether-giving; it rarely occurs, but it is necessary

to thoroughly appreciate its nature when we meet with it. I may here say that, in the case narrated, the swelling of the parts and consequent embarrassment to breathing took place on each occasion within a minute or two after commencing the administration. When I found that I had to anæsthetise this patient for the third time, I employed gas-and-ether, because I wished to ascertain whether, by the greatest possible care in the administration, I could prevent the difficulties which had before arisen; but, as I have described, nitrous oxide and ether again produced such symptoms that I was obliged to resort to chloroform. From later experience I am inclined to believe that patients of this kind are best anæsthetised with the A.C.E. mixture, followed by ether, plenty of air being allowed throughout.

(4.) *Difficulties arising from Temporary Narrowing or Occlusion of the Upper Air-passages.*—This is perhaps the most important part of the subject. A careful study of those cases which, as the expression goes, "take the anæsthetic badly," will reveal the fact that in most instances some embarrassment to breathing arises purely in consequence of some mechanical, but not adventitious, hindrance in the upper air-passages to the entrance and exit of air. Such difficulties are most apt to arise under ether; they occasionally present themselves under nitrous oxide; and are least frequently met with under chloroform. They are most often met with in plethoric subjects. It is a very good rule for the chloroformist to ascertain the state of the upper air-passages before giving an anæsthetic; for should any inadequate breathing previously exist, obstruction under the anæsthetic will be more liable to occur. He should ask the patient to close the mouth and breathe through the nose; he should examine the back of the throat; and he should see if the teeth fit accurately or not. Should he find that nasal respiration is defective or impossible, he should certainly not give ether without the preliminary insertion of a small mouth-prop, in order to maintain an air-way. Should the patient be very full-blooded, the administrator may, with advantage, adopt a similar precaution, even though no nasal obstruction exists, for, as was shown in the last section, such patients are liable to embarrassment in breathing with ether, and, if the mouth be kept open, it is easy to cope with this difficulty and remove it. Should the teeth meet accurately some slight difficulties may arise, but only in the class of patients just referred to. I may here give an example of the necessity for the above precautions. Let us suppose that a patient whose general health is good, and who is rather plethoric in appearance, is about to undergo an operation for the removal of nasal polypi. Nitrous oxide followed by ether is

chosen, the chloroformist knowing that if he gives his patient a full dose of ether—allowing him to breathe the vapour for about ten minutes—the resulting anæsthesia will be of sufficient duration for the performance of the operation. On asking the patient to breathe through the nose, the chloroformist finds that he can only just manage to do so in consequence of the polypi present. Now, should such a patient possess fairly good teeth, and should the administrator proceed to give him gas-and-ether without previously inserting a little mouth-gag, respiration will almost certainly become embarrassed and eventually stop; the patient will get more and more cyanosed; and however forcibly the head be extended (according to the plan recommended by Dr. Howard) the obstruction will not be removed. The administrator must open the clenched jaws in some way or another and admit air—a matter sometimes of difficulty. The sequence of events in the case described is probably as follows: When such a patient is, even for a very short time, as in the administration of nitrous oxide and ether, deprived of air, general venous engorgement, commencing at the right side of the heart, takes place, and the tongue, the mucous membrane about the superior aperture of the larynx, the soft palate, and other parts, including the nasal polypi themselves, become so engorged as to stop the air-way. Although nasal respiration may be just possible before the administration, it ceases under ether; much spasm of the jaws and parts about the root of the neck arises, the teeth meet one another, and the tongue is pressed up against them. In such cases as these the preliminary insertion of a small mouth-gag between the teeth, in order to maintain a free oral air-way, is usually all that is necessary; and should the administrator wish, for any reason, to open the mouth wider during the administration, he can easily do so at any moment. The above case has been quoted merely as an example of the necessity for forethought. Apart, however, from cases of nasal obstruction, the administrator should always see that a free air-way is maintained throughout the inhalation; and it is a matter of little importance whether such air-way be oral or nasal.

In this connection it may be worth while to direct attention to a minor difficulty which is not infrequently met with under ether. It starts in the first instance in partial or complete closure of the larynx. This closure may be due to spasm (from too strong a vapour or the presence of mucus), or it may be due to imperfectly-performed acts of deglutition—acts arrested at the moment when the epiglottis covers the superior aperture of the larynx. The inadequate or arrested passage of air through the larynx tends to set up an asphyxial state, which leads to an over-loaded right heart and consequent venous engorgement

of the structures already referred to, and, possibly also accounts for the tonic spasm of many muscles which often ensues. The difficulty in breathing, which was originally due to a narrowing of the air-way at the larynx, now becomes intensified by reason of the swelling of the tongue, soft palate, etc.; in other words, the same difficulty arises as that already discussed. Tilting back the head or pushing forwards the lower jaw may for a time keep the enlarged tongue and soft palate away from the back of the pharynx and allow of nasal respiration; but the condition tends to culminate in actual arrest of breathing unless the mouth be kept open. I have watched this condition in many cases, and the explanation given seems to me the most feasible. The difficulty is most likely to arise either at the early period of etherisation, when the larynx is sensitive to ether, or when only partial anæsthesia is present, *i.e.*, when the reflex act of deglutition is possible. It is obviously of importance, therefore, whenever any laryngeal spasm occurs under ether, to lessen the strength of the vapour and to give plenty of air; should this not answer, the mouth should be opened freely and the tongue pulled forcibly forwards. The difficulty is very liable to arise if, after full anæsthesia has been established, the patient be allowed to "come round" a little; for swallowing takes place, and the first stone may thus be laid in setting up the difficulty.

With all anæsthetics stertor must be watched carefully, as it may increase and culminate in obstructed breathing. This condition is most liable to arise with nitrous oxide and ether. With the former agent the face-piece should be removed after one or two stertorous breaths; should the stertor pass into obstruction the difficulty may be overcome, either by pressing the lower jaw forward from behind, or by tilting the head back, or by passing the finger into the mouth and hooking the tongue forwards. I have known this difficulty to occur in very stout people, and only to be remedied by the last mentioned procedure. Stertorous breathing under ether may nearly always be corrected by pushing the lower jaw forwards and thus bringing the tongue away from the back of the pharynx. Cases not infrequently occur in which it is necessary to keep the jaw pressed forward the whole of the administration in order to maintain an air-way.

A few words must be said concerning those patients who exhibit so much difficulty of breathing under ether as to render it necessary to substitute the A.C.E. mixture or chloroform. Should stridulous or crowing breathing persist, associated with deficient entry of air, even though the air-way above the larynx be perfectly free, it is not wise to push etherisation. The ether should be withheld and the laryngeal

spasm allowed to subside. The agent may then be cautiously re-applied ; and should similar phenomena arise the A.C.E. mixture or chloroform should be substituted.

Mucus sometimes accumulates at the back of the throat, and then requires to be sponged away from time to time. If the patient's head be kept upon the side it will be found that mucus will drain away and will embarrass respiration very little even though, as is the case when ether is given from a cone or towel, it be secreted in large quantities. Mucus is most likely to be excessively produced in the full-blooded patient ; and by reason of the acts of swallowing which accompany returning consciousness, acts which cause the passage of mucus into the stomach, vomiting after ether is more common in the full-blooded than in the sparely built and thin patient.

Mucus is frequently abundantly secreted by young children under ether, and for this, amongst other reasons, it is best to use the A.C.E. mixture in such cases.

Blood is often a source of difficulty in operation in or about the nose or mouth. A little management of the positions of the head at the time that hæmorrhage is taking place, will usually suffice to remove any cause for anxiety. Thus, in removal of the tongue the anæsthetist should keep the patient's head as much on the side as the operator will allow. As such operations are usually performed under chloroform, the patient should not be propped up vertically, as was once the custom. If, however, ether is the anæsthetic given, there is no objection to a sitting posture, and then, when once deep etherisation has become established, the blood may best be prevented from getting into the larynx by keeping the head vertical or bending it a little forwards if the operator can manage to proceed with the head in such a position. In prolonged dental operations under ether this vertical position of the head is the best, for blood flows into the floor of the mouth and can readily be sponged out from time to time. It is a good plan even when administering nitrous oxide for a dental operation, to have the head as vertical as the nature of the operation and the operator will allow ; for, should it become necessary to re-apply the face-piece, there is very little to be feared from the blood produced in the first part of the operation embarrassing respiration. In removing post-nasal adenoids Mr. Braine, who has had a very large experience in such cases, gently raises his etherised patient into the sitting posture, the operator then uses his finger, or an artificial nail, as employed by Sir William Dalby, and scrapes away the growths which, as well as the blood, escape through the mouth and nose if the patient's head be bent forwards. Some operators throw the head well back over the end of the bed or

operating table. In this position blood cannot get into the larynx, as it gravitates into the posterior nares, and may from time to time be sponged away if necessary. Should the operator insist upon having the patient's head in such a position that blood is likely to run towards the larynx, sponges, securely fastened in strong tongue-forceps, should be repeatedly used to mop away the blood at the back of the throat.

The contents of the stomach may, in operations of emergency, and in such cases as intestinal obstruction, be suddenly ejected during anæsthetic sleep. It should be an invariable rule in these instances to keep the patient's head on the side throughout. This is more especially necessary in intestinal obstruction, for vomiting may very quietly occur, and if the anæsthetist be not on the alert, difficulties of the most serious nature may arise.

In concluding these remarks, it must be confessed that it is practically impossible to draw a line between difficulties and dangers which may arise in giving an anæsthetic. Several of the above so-called difficulties may, if not recognized and corrected, resolve themselves into dangers. It must be confessed also that our knowledge of the physiological effects of anæsthetics being so defective, we are not in a position to thoroughly understand many phenomena which arise. Still, it should be our aim, by careful clinical observation to arrive at conclusions which may be of use to us for future guidance.

ANCYLOSTOMIASIS. (See "Beri-Beri.")

ANEURYSM. *Walter Pye, F.R.C.S.*

(1,) A drachm of iodide of potassium every day, combined with absolute rest, and with prohibition of liquid food as far as possible, is reported by Dr. Motis, of Bogota, as effecting the cure of a patient with abdominal aneurysm. Rest was rigidly carried out. In three months the tumour was much smaller, the pain had ceased, and a troublesome cough had stopped. The potash salt was changed for the soda one. The patient was allowed to get up at the end of six months, and has remained free of symptoms ever since.

(2,) Mr. Keetley has attempted with only partial success to compress the abdominal aorta above the origin of the cæliac axis, by means of a lever of an especial form, apparently working on a principle akin to that of Davy's lever. The instrument is passed through an incision made below the ribs on the right side into the peritoneal cavity, through Winslow's foramen, and its thick end is brought on to the aorta. In the case in question there was a large abdominal aneurysm, for which it was hoped that compression might be beneficial. It was not possible, however, to sufficiently control the circulation to continue the attempt, although the aorta was partially

compressed. The failure was due to the large size of the tumour.

REFERENCES.—Motis, "Lancet," May, 18, 1889; Keetley, "Med. Press," June 12, 1889.

Synopsis.—(Vol. 1889, p. 154.) **Antipyrin** and **Phenacetin** for relieving pain (Beaumetz).

ANGINA PECTORIS (Its Nature and Treatment). See also "Bright's Disease."

This affection is the result of various pathological changes, and its mode of production is therefore somewhat diverse. But in this place the only form of angina pectoris which can be discussed in this connection is that which depends upon irritation of the vaso-motor system, the affection known in Germany as *angina pectoris vaso-motoria*. In the typical form of this affection there is high arterial tension, which alone is enough to distinguish it from almost all other forms of angina pectoris, with pallor and coldness of the surface and an excited frequent pulse, caused by the struggle to overcome the obstacle to the passage of the blood into the capillaries which results from the contraction of the arteries throughout the body. It might be expected that the pulse should be infrequent with high tension, but it must be remembered that in all true cases of angina pectoris the heart is enfeebled. At times the vascular contraction may be local, but in by far the larger number of cases the arterial spasm is general. Brief reference may be made to the means by which the excitement of the vaso-motor centre and the spasm of the vessels may be removed. For rapid effects, no drug is to be compared to **Nitrite of Amyl** administered by inhalation, and for slower but more lasting influence **Nitro-Glycerine** is equally reliable, while **Spirit of Nitrous Ether** is in many cases a most useful preparation. The tropeine series of drugs must not be passed over in silence, as **Belladonna, Stramonium,** and **Hyoscyamus,** as well as their alkaloids, possess considerable efficacy in such cases, and **Lobelia** and **Tobacco** may be found of use in certain instances. We may also fall back upon **Chloral** and several products of distillation, especially **Chloroform** and **Ether,** if any of the substances just mentioned cannot be employed in the treatment of such affections. (Dr. G. A. Gibson, "Edin. Med. Jour.," Dec., 1888.)

Synopsis.—(Vol. 1883.)—**Allyl,** ij to iv capsules daily, each containing v drops, or ij to iv drops subcutaneously, dissolved in j or ij cubic cm. of Ether (p. 11); **Dioscorea,** powdered root, gr. ij to v, in pseudo-angina pectoris (p. 46); **Lobeline,** gr. $\frac{1}{100}$ to $\frac{2}{100}$ (p. 73); **Methylal** inhaled (p. 77); **Pyridin,** gr. j or ij, is a valuable palliative (p. 85).

(Vol. 1889, p. 154.) **Liq. Nitro-Glycerine** (1% solution) ♏ij, taken when attack threatens. **Pyridin** relieves more quickly than any other remedy (p. 63).

ANOREXIA.

Synopsis.—(Vol. 1889, p. 29.) **Tinct. Cannabis Indicæ**, ♏v to x. half an hour before meals in anorexia due to exhausting diseases.

ANTERIOR METATARSALGIA, *Walter Pye, F.R.C.S.*

Described by Dr. Pollorson of Lyons as a condition hitherto unrecognized as a distinct affection of the foot, seems to be analogous to that described a year or two back by Mr. H. Marsh as a common and painful affection of the big toe joint, met with in adolescents, save in this, that the case he cites is that of an adult patient. In all probability acute pain in the front of the foot is met with in both sexes, both in adolescence and in young adult life, but is most common in growing lads. It may cause a good deal of distress, and is brought on by exercise in boots, but there is no pain so long as the foot is at rest and no shoe is worn. The pain comes on suddenly and is felt across the front of the sole of the foot, and the sensation is that of something having given way in the foot. If walking is persisted in the pain reaches a maximum in a few minutes. On removing the boot and compressing the foot around the heads of the metatarsal bones relief is immediately given, especially if the central metatarsals are pressed upwards, and Dr. Pollorson considers that the pain is undoubtedly due to laxity of the transverse metatarsal ligaments, which allows of a partial breaking down of the arch formed by the five metatarsal heads.

As regards treatment, the wisest plan seems to be to use a convex indiarubber sole pad, such as is used in flat foot, but of course of a different shape and in a different place.

ANUS ARTIFICIAL AND FÆCAL FISTULA.

A. W. Mayo Robson, F.R.C.S.

Definition.—Any abnormal opening discharging fæcal matter is a fæcal fistula; but the opening left after enterotomy or colotomy is known as an artificial anus. Indications for operation: (1,) Emaciation from escape of chyle, the opening in the bowel being high up; (2,) The patient desiring to be rid of a loathsome ailment.

Where the perforated bowel is near the surface it is amenable to operation, being more easily closed when there is a mere bending of the gut with a hole in its side, than where, as after enterotomy, there are two parallel tubes placed side by side and separated by a spur.

Dr. Wm. J. Taylor adopted Dr. Senn's method of inflation by hydrogen gas, to aid in the diagnosis of the position of the internal opening of a fæcal fistula. One gallon of gas was used, and it escaped by the fistula in less than half a minute, and before any gurgling was heard in the right iliac region by its passage through

the ileo-cæcal valve; thus proving the fistula to be in the colon. Laparotomy proved the fistula to be associated with carcinoma of the colon.

Methods of treatment: (1,) By plastic operation, either by forming a flap, or by bringing together the refreshed edges by means of sutures; (2,) Pressure by means of a truss or by bringing the granulating edges together with strapping; (3,) By the application of caustic or of the actual cautery to the edges of the fistula; (4,) Where there is a "spur": *(a,)* By depressing it by means of rubber tubing passed into the upper and lower openings; *(b,)* By gradual division of the spur by ligature; *(c,)* By destruction of the spur by means of Dupuytren's enterotome; (5,) Resection and suture of intestine after other means have failed.

In artificial anus following the treatment of gangrenous hernia, Dr. Korte says that the closure by secondary resection and suture of the intestine gives a mortality of 37·8 per cent., while treatment by the enterotome with subsequent plastic operation gives a death rate ranging from 5·1 to 9·9 per cent.

REFERENCES.—Makin's, "St. Thos. Hosp. Rep.," vol. xiii, p. 181; Sinclar, "Brit. Med. Jour.," Aug. 10, 1889 and Nov. 16, 1889, p. 313; Taylor, "Med. News," Philadelphia, 1888; "Annals of Surgery," vol. i., 1889, p. 445; Korte, "Deut. Med. Woch," No. 41, 1888; Penrose, "Med. News," Dec. 15, 1888, p. 671; Cotterill, "Lancet" Feb. 9, 1889, p. 283.

ANUS, Fistula and Abscess of. (See "Abscess.")

Synopsis.—(Vol. 1888, p. 62.) **Hydrastis Tincture** locally.

APROSEXIA. *Greville MacDonald, M.D.*

Aprosexia is a term given by Guye, of Amsterdam, to certain mental disturbances seen in the subjects of nasal obstruction. (*Vide* "Rhinitis, Chronic.")

APTYALISM. *F. de Havilland Hall, M.D.*

Under the title of persistent aptyalism, Mr. Jonathan Hutchinson describes a series of cases of dry mouth. In all five cases the patients were women past middle life, and in all the condition having once begun had proved to be persistent, whilst in none had it been the precursor of any other disorder of the nervous system. The essence of the disease consists in a complete and seemingly permanent arrest of all salivary and buccal secretion. Treatment seems to have little effect, though in one or two cases **Jaborandi** in 30 minim doses three times a day has given relief. ("Brit. Med. Jour.," vol. ii., 1888, p. 993.)

ASCITES AND GENERAL DROPSY (Treatment of).

F. de Havilland Hall, M.D.

That ascites and general dropsy very often yield to the **Milk Diet** treatment is a fact which had been recognized by the native physicians of India from a very remote age. Even in modern times many of the native physicians and quacks treat their dropsy cases in the same way, with at least partial success.

M. Germain Sée states that enormous diuretic action is established by the use of 100 grammes of **Lactose** (that is to say, the quantity contained in two litres of milk), while there is no certainty of obtaining this effect by four or five litres of milk. He also states that while milk, taken in large doses, produces diuresis and a very marked glycosuria, large doses of lactose cause a remarkable polyuria, but no glycosuria.

Mr. K. P. Chowdhoory states that since he has adopted the method of treatment, first recommended by Dr. Richards, of an exclusive milk diet in cases of ascites and general dropsy, he has met with almost uniform success. In the notes of the two cases he details, in addition to the milk diet, tincture of **Iron, Digitalis, Squills** and **Oil of Juniper** were ordered in one case, and in the other, **Cinchona, Sulphuric Acid, Sulphate of Iron,** as well as a powder containing **Digitalis, Squills** and **Juniper.** As such active drugs were employed, it is hardly correct to give all the credit to the milk. There is no doubt, however, that in some forms of dropsy a milk diet has a powerful influence for good. It is easily digested and quickly improves the quality of the blood; this improvement in the quality of the blood leads to the absorption of the fluid poured out into the serous cavities and cellular tissues.

Dr. Schwass reports excellent results from the combination of **Calomel** and **Digitalis** in ascites following cirrhosis of the liver, five out of ten cases being cured by their use. Results may be obtained by this combination, which are not possible when either remedy is employed alone; moreover, the simultaneous use of the digitalis renders the calomel better supported, and permits of a longer treatment with it. It prevents salivation, stomatitis, and does away with the danger of gastric or intestinal catarrh. In order for ascites from cirrhosis of the liver to be cured, it is necessary for the patient to come under treatment in the earliest stage of the disease. In most of the unsuccessful cases tubercular peritonitis was present, a complication which evidently more endangered life than the cirrhosis itself.

Dr. R. Stintzing reports twenty-five cases in which marked diuretic effects were produced by the use of **Calomel,** nineteen of these being dropsy. Of the dropsical cases eleven were treated with favourable results, consisting in the increase of urine evacuated and decrease in

the dropsy, and improvement of the general health ; in eight cases no improvement was noted. The best results were obtained in cases of cardiac dropsy.

M. Muret is of opinion that *Faradisation of the abdominal walls* is worthy of trial in cases of chronic ascites. Various reasons have been given for this influence of faradisation of the abdominal muscles, viz.: (1,) That it increases the absorbent powers of the lymphatics (ERB) ; (2,) That it strengthens muscular pressure and so increases absorption (GLAX) ; (3,) A later opinion of Erb, that it induces catalytic action in the ascitic fluid, is at present little understood.

REFERENCES.—Sée, "Semaine Médicale," June 12, 1889 ; Schwass, "Wien. Med. Blät.," Sept. 27, 1888 ; Stintzing, "Cent. für Klin. Med.," Sept. 8, 1888 ; Muret, "Rev. de Méd.," Sept., 1888, pp. 719 to 745.

ASTHMA. *Frank J. Wethered, M.D.*

Dr. Nunes has continued his researches as to the use of lobelia inflata in asthma. Instead, however, of using the tinctures in doses of ½ to 1 oz., he now advises **Lobeline.** According to Dr. Nunes this drug may be administered subcutaneously without producing any local reaction. This author publishes tolerably full notes of nine cases of asthma in which **Lobeline** seemed to produce decided relief, and he terminates his memoir with the following conclusions : (1,) **Lobeline** does not possess the tonic effects generally attributed to it in the doses which he recommends ; (2,) It possesses no emetic or nauseating properties as is the case in **Lobelia,** and its employment is, therefore, preferable where **Lobelia** is indicated ; (3,) He has employed it in doses of from ¾ of a grain to 6 grains daily for adults : for children, ⅙ to ¾ of a grain ; (4,) It has no local irritating action, and, therefore, may be administered in hypodermic injection ; (5,) The evident action of **Lobeline** on the nervous system would seem to indicate its employment in other convulsive affections, such as tetanus ; (6,) The cases in which he has employed **Lobeline** have remained permanently cured.

Dr. Theodore Jores recommends the use of **Menthol** in a 20 per cent. solution in olive oil in cases of asthma. The administration was followed by the almost complete disappearance of all pulmonary symptoms. The drug was used as an inhalation, and from its very first application, and in every instance, served to relieve the asthmatic attacks.

REFERENCES.—Nunes, "Therap. Gaz.," July 15, 1889; Jores, "Therap. Gaz.," June 15, 1889.

Synopsis.—(Vol. 1888, p. 129.) **Nitrite of Sodium,** gr. ij to v in water; **Pot-**

as. Iod. v gr. doses, may be combined with Ext. of Stramonium, gr. $\frac{1}{8}$ to $\frac{1}{4}$, or with Chloral (Lazarus); Cocaine, gr. $\frac{1}{4}$ t.d. (Da Costa); Hyoscyamine, gr. $\frac{1}{150}$, ℞ Pot. Nitrat. ℥ss, Pulv. Anisi Tinct. ℥ss, Pulv. Stramonii fol. ℥j Ft. Pulv., Sig., a thimbleful ignited and fumes inhaled (Sawyer); Pyridine, ℥j poured into a saucer and fumes inhaled for 20 or 30 minutes thrice daily, or at beginning of paroxysm; Caffeine in cardiac asthma; Digitalis; Sparteine, gr. $\frac{1}{15}$ to $\frac{1}{4}$, 4tus hor., alone or with Potas. Iod.; Arsenic and Iron, with one of the preceding if heart is feeble; Benzoin or Eucalyptus inhalations, if acute bronchitis attend the asthma, or if chronic, pure Terebene and the Balsams: Allyl Tribromide in capsules containing v drops, and ij to iv given daily (p. 11); Atherosperma, oil, gtt. j to ij every 6 hours. Tinct. ℥j as diaphoretic and diuretic (p. 22); Carbonic Acid Gas, as inhalation (p. 31); Ichthyol, gtt. ij to v, and of Ammonia Sulphate of Ichthyol, gtt. v to x (p. 65); Lobeline, gr. $\frac{1}{150}$ to $\frac{1}{60}$ (p. 73); Methylal, ℥j, proposed as remedy (p. 77); Myrtol, ij globules, containing xv centigrammes each, twice daily, in catarrhal asthma with paroxysmal attacks and palpitations (p. 79); Oxalic Acid, ℞ Ac. Oxal. gr. xxxj, Syr. Zinzib. ℥j, Aq. ℥vj. M. Sig. ℥j every hour (p. 81). Pulsatilla, ♏j to v; its alkaloid Anemonin is useful in asthma (p. 84).

(Vol. 1889.) Bidens Pinnata in decoction for hay asthma (p. 24); Delphinium Staphisagria, gr. $\frac{1}{60}$ (of delphine) during spasm (p. 37); Hydriodic Acid Syrup given in increasing doses until ℥ij are taken thrice daily, useful in chronic asthma; Onobaio is suggested as a remedy (p. 57); Solanin, grs. ij$\frac{1}{2}$ to iv$\frac{1}{2}$ daily (p. 67); Veratrum Viride in peptic asthma, using a 1% solution of the fluid extract; dose, gtt. x to xx (p. 43).

ASTHMA (Nasal). *Greville MacDonald, M.D.*

The possibly nasal origin of many cases of spasmodic asthma is still being hotly discussed by the most prominent rhinologists, some of whom give certain definite areas as the sources of the reflex action. Thus, while T. N. Mackenzie, of Baltimore, accuses the posterior extremity of the inferior turbinal, Hack asserted as strongly that the anterior was at fault, while E. Woakes finds the middle spongy body responsible for most symptoms for which the throat-specialist's advice is sought. But, although there is little agreement on such points, we cannot dispute the fact that some cases of bronchial asthma are closely associated with nasal disease. Upon this Trousseau has strongly insisted; nor can we disregard the evidence of such careful observers as Bosworth and Beverly Robinson, of New York. The former tells us that out of eighty cases, including thirty-four of hay-asthma, forty-six were cured and twenty-six improved. On the other hand, Shurly, of Detroit, experimenting on the living animal, could excite no spasm of the bronchial tubes from irritating any terminations of the fifth nerve, nor has he had any success in the intra-nasal treatment of asthma. He attributes Bosworth's success to counter-irritation, and claims that equally good results follow blistering over the neck and chest. Our own experience would lead us to assert that while most patients seeking advice on account of asthma have their noses in a fairly normal

condition, yet occasionally nasal obstruction is encountered ; and that the relief of such obstruction is invariably followed by more or less relief, even in severe and long-standing cases of bronchitic asthma. Slight cases of spasmodic asthma are even apparently cured by rectifying nasal abnormalities. (See "Hay-fever.")

REFERENCES.—Mackenzie, "Amer. Jour. Med. Science," July, 1883 ; Woakes, "Post-nasal Catarrh," 1884 ; Bosworth, "New York Med. Jour," Jan., 1889 ; Robinson, "New York Med. Jour.," June, 1889 ; Shurly, "New York Med. Jour.," Jan., 1889.

ATONY OF BLADDER. (See "Bladder.")

ATROPHY. (See "Progressive Atrophy.")

BALANITIS.

Synopsis.—(Vol. 1888, p. 133.) *In Acute Stage*, paint inflamed parts with Nitrate of Silver, gr. x to Aq. ℥j, or in phimosis inject a solution, gr. xv to Aq. ℥j, under prepuce ; Carbolic Oil, j to xxx, on rag separating inflamed surfaces. *In Sub-Acute Cases* Dusting Powder is best, *e. g.*, Zinc Sulphate, Calomel, or Calcium Sulphide, with Starch Powder as vehicle.

BANTING CURE. (See "Dietetic Cures.")

BERI-BERI, TROPICAL ANÆMIA, and ANCYLOSTOMIASIS.

Alexander Crombie, M.D.

In an important report written in 1887, Dr. Kynsey drew attention to the subject of the intimate connection which exists between the so-called beri-beri of Ceylon, and the presence of the ancylostomum duodenale in the intestinal canal of the patients. He recognizes two principal forms of anæmia in that island, which have both been included under the name of beri-beri, one which is a pure malarial cachexia, and another which depends on the presence of the ancylostomum duodenale, and is, in fact, ancylostomiasis, and he denies altogether the existence of beri-beri as a specific disease in Ceylon. He quotes also Dr. Erni, whose observations were made in Java and Sumatra, as being of the same opinion, that these parasites (the ancylostomum or the tricocephalus dispar) or the lesions caused by them, are found in every case of beri-beri, which disease is really a helminthiasis. These nematodes, but especially the ancylostomum duodenale, bring about the symptoms of beri-beri by the anæmia which their presence in the intestine leads to, and rapid recovery follows their expulsion if the debility and dropsy have not been too prolonged, and degenerative changes in the heart and other organs have not already set in.

Surgeon-Major W. F. Thomas, writing on the same disease, says he has seen many cases of beri-beri in India, on the West Coast, in the Northern Circars, Orissa, the Central Provinces, and in Burma, and

that in a large number of them he found the ancylostomum duodenale, the severity of the symptoms being in proportion to the number of these parasites, and he considers their expulsion an essential part of the treatment of beri-beri. Dr. Oswald Baker, of Moulmein, has also found the same nematode present in most, if not all, cases of anæmia, and dropsy, where these symptoms were not obviously due to some other cause, and has made the important discovery that many cases of "jail debility," which would hitherto have been ascribed to malaria, scurvy, insufficient food, despondency or other conditions of jail life, are in reality, cases of ancylostomiasis, cases which had resisted anti-malarial and anti-scorbutic treatment, recovering rapidly after expulsion of the parasites. He found the ova of the ancylostomum present in the stools of many convicts who were not yet exhibiting any symptoms of depraved health, and concludes that the parasites must be present in considerable numbers before the drain on the system is sufficient to develop the usual symptoms of anæmia, dropsy, and debility.

We are informed by Dr. James McNaught, of Nowgong, that ancylostomiasis is very common among the coolies employed in the tea-gardens of the Brahmaputra Valley, where it gives rise to the same symptoms of anæmia and dropsy, which were formerly attributed to the malarial cachexia, but are now readily amenable to more appropriate treatment.

At a discussion at the South Indian Branch of the Medical Association in April, 1887, it was stated that three cases of ancylostomum duodenale had occurred in the General Hospital at Madras within a short time, and McConnell met with it in twenty cases in Calcutta in three years. These facts show that the parasite is very widely distributed in India, from Ceylon to Assam, and that it is capable of giving rise to great and often fatal debility, and its importance as a possible cause in every case of "tropical anæmia" cannot be over-stated,—a position which the parasite has held in the minds of medical practitioners in Egypt for a long time, and which must now be extended to it in India.

Is Beri-Beri a Specific Disease?—The tendency of the above observations would be to show that a large number of cases which have hitherto been classed with beri-beri, must now be separated from it and regarded and treated as cases of ancylostomiasis. But there remains a certain number of cases which have symptoms which are absent in mere "tropical anæmia" whatever be its cause, and present in what we must at present continue to call true beri-beri. The symptoms referred to are those of multiple peripheral neuritis, with the staggering gait, loss of the knee-jirk and other reflexes, the

paralysis, and the tenderness on pressure over the nerve-trunks, of that condition. These symptoms would seem to indicate that there is something more in beri-beri than mere abstraction of blood from the system by parasites in the intestine. Pekelharing, who has been studying the disease at Achin under the orders of the Netherlands Government, is announced to have discovered a special micrococcus as the cause of these paralytic symptoms of true beri-beri, but the result of his researches has not yet been published.

TREATMENT.—The treatment which appears to be most effectual in dislodging the ancylostoma is, after preparation, similar to that required in cases of tapeworm, the imbibition of powdered **Thymol** in three doses of 30 grains each, at intervals of two hours. Oswald Baker has given 180 grains in four doses at an average interval of four hours. A repetition of the treatment is sometimes required. Thymol in these doses sometimes gives rise to a feeling of light-headedness. As many as three hundred and twenty parasites have been evacuated by a single patient after the imbibition of thymol.

REFERENCES.—Watson, "Indian Med. Gaz.," April, 1889; Baker, do. Dec., 1888.

BLADDER. *E. Hurry Fenwick, F.R.C.S.*

Atony of the Bladder.—Cases of ataxia in which the atony of the bladder has been relieved by the Motchütkovsky-Charcot suspension treatment are so few that at present the success obtained thereby only justifies the trial (see "Locomotor Ataxy, Suspension in"). Catheterism is still the only method adopted, though Heddæus throws out a valuable hint of emptying the bladder by manual compression and massage. Galvanism has proved of value in atony following over-distension of the young or adult bladder, but is of questionable value in nerve lesions of the viscus. The intimate association of ano-vesical cord centres is referred to by Mr. Hutchinson, who relates the case of a man who, after an operation for hæmorrhoids, had immediate, complete, and permanent ano-vesical paralysis.

Geijtl, of Utrecht, has observed complete vesical paralysis follow the removal of tumours from the bladder.

One case of retention of urine in a female from retroversion of the gravid uterus is recorded from the Medical Mission in China. Patient said she had had retention for twenty-five (?) days. A student drew off nineteen pounds (304 oz.) of urine with the catheter. The retroversion was reduced by an inflating or pear-shaped pessary. The catheter had to be used for a month, and the patient recovered.

REFERENCES.—Saundby, "Brit. Med. Jour.," Sept. 14, 1889; "Brit. Med. Jour.," Aug. 3, 1889; "Lancet," Mar. 16, 1889; *Ibid*, Mar.

9, 1889, p. 495 ; Settier, "Gaceta des Enfermed. des los Organos Gen. Urin.," No. 2, p. 36, 1888 ; Motchütkovsky, "Vratch," Nos. 17 - 21, 1883 ; Ladame, "Revue Med. de la Suisse Romande," June, 1889, p. 347 ; Hutchinson, "Lancet," May 18, 1889, p. 975 ; "Lancet," Oct. 5, 1889, p. 707.

Calculus.—The most important question that can be asked concerning stone in the bladder is : Are we able to avoid a cutting operation in male children as well as in the adult ? The answer to this has come from India in the shape of Surg.-Major Keegan's work, with a record of a hundred and fourteen litholapaxies performed upon boys, the youngest child being under two years of age. (For the technique, see "Med. Ann.," 1889, p. 189.) Various corroborative reports establish the value of the operation. The chief advantages gained by using the lithotrite in male children instead of the knife are : (1,) No cutting is necessary ; (2,) Greater rapidity of cure, in favourable cases the child getting up and out the next day ; (3,) No after results are observed unless it be a testitis following a prolonged operation ; (4,) The mortality is lower.

Large stones can be safely dealt with thus : Surg.-Major Caldecott crushed a stone of 700 grs. in a boy aged nine and a half. Although this operation has been performed in London and some of the provincial hospitals, yet the reports for 1889 are scanty. It is obvious that the cutting operation in children, with its little risk, is still in high favour ; and the difficulty of obtaining the smaller lithotrites have kept many from employing this valuable innovation. Mr. Walsham reports the removal of a large, hard calculus in a boy, aged thirteen, by litholapaxy. The stone weighed 370 grs. ; it was composed of uric acid. A No. 12 evacuating catheter was used. He notes that during the operation each successive passage of instruments, whether lithotrite or evacuating catheter, was attended with increasing difficulty, presumably from the swelling and congestion of the parts. He emphasizes the importance of the use of the stylet to clear out the evacuating catheter before withdrawing it.

Lithotomy.—One hundred and thirty-nine cases of lithotomy are recorded by Dr. Assendelft. In thirty-five cases out of thirty-eight lateral lithotomies, he has observed hæmorrhage following the operation. He quotes one hundred and two suprapubic lithotomies with two deaths, and these in children under five years ; ninety-eight patients recovered. Of the two remaining cases one is yet suffering from a fistula, and the other is afflicted with pyelitis. Hæmorrhage was considerably less than in the lateral lithotomies. In no case was the peritoneum wounded. The bladder was sutured in all cases where

the urine was normal. Of seventy-four suture cases twenty healed *per primam;* in seventeen the edges separated near the drainage tube ; in thirty-three they separated fully. All the patients were under thirty years ; sixty of them being under ten years.

Mr. Vincent Jackson, of Wolverhampton, quotes one hundred and thirty-two perineal lithotomies with five deaths. The operations were performed at the Wolverhampton General Hospital, between the years 1864—1888, the age varying from one to fifteen years, and the death-rate being one in twenty-six.

Dr. Rosenbaum, of Tiflis, reports thirty-six suprapubic operations with seven deaths. What appeared to exercise far more influence on the result was the general nutrition of the patient and the existence of vesical catarrh, rather than the mere size of the stone.

Sir Henry Thompson quotes thirty-one cases of suprapubic operations. Of these there were twenty calculous cases with four deaths. Of the eleven cases of tumour only one was fatal, and that from pyæmia ; but only two can be said to have been cured, the remainder dying within a few months, with the exception of one in which the tumour recurred and needed a second operation, and one who suffered from frequent attacks of stone necessitating the lithotrite.

Mr. Bond, of Leicester, records six cases of suprapubic lithotomy, the suture being used in four, all healing *per primam,* there being no leakage from the wound after the first twenty-four hours. Two of these cases were boys under twelve, and two were adults over forty. Mr. Bond considers the following points of importance as ensuring success : (1,) Produce a healthy acid condition of the urine before operation, by rest in bed and administration of **Boracic Acid** from 5 to 10 gr. doses thrice daily for some days ; (2,) *Avoid bruising;* (3,) Suture closely, taking care to close both angles of the wound ; (4,) No catheter should be left in the bladder, the instrument being used as little as possible after operation. Finally, the escape of acid normal urine between the stitches during the first twelve hours does not prevent primary union of the wound.

Dr. Lendon, of Australia, after recording three successful suprapubics in children under five years of age, says that had the proper instruments been available he would have performed litholapaxy in preference ; but he thinks for a surgeon who has no experience of vesical surgery, the suprapubic incision is in many respects preferable to perineal lithotomy.

Mr. Jacobson records a vaginal lithotomy in a patient six and a half months pregnant, with immediate suture of the wound followed by rapid recovery and normal delivery at full term.

Dr. Fessenden Otis describes a "perfect evacuator" for the removal of stone fragments after litholapaxy, in which perfect trapping of all fragments, without the use of any form of valves, perforated tubes or strainers, is obtained. He gives the preliminary history of litholapaxy thus: Otis discovered the normal calibre of the urethra to be much larger than was generally supposed. Prof. Bigelow, with the knowledge thus obtained, conceived the operation of removing stone at a single sitting by means of large powerful lithotrites and a modified Clover's suction apparatus.

The distribution of calculous disease in the British Isles is, according to Dr. Isambard Owen's collective investigations, along the Eastern coasts of England and Scotland. Its chief seat in South Britain is the county of Norfolk, whence it radiates into the neighbouring counties. In North Britain the part which it most affects is the angle of land above Aberdeen, from which it extends down the east coast to the Forth.

REFERENCES.—Keegan, "Ind. Med. Gaz.," Aug., Sept., Oct., 1888; Walsham, "Brit. Med. Jour.," Oct. 15, 1887, p. 218; Fenwick, "Prov. Med. Jour.," Feb., 1888; Assendelft, "Annals of Surg.," 1889, p. 393 (from the "Vratch"); Walsham, "Lancet," June 8, 1889, p. 1134; Rosenbaum, "Lancet," July 6, 1889, pt. 2, p. 31; Jacobson, "Lancet," Mar. 30, 1889, p. 628; Lendon, "Austral. Med. Gaz.," "Brit. Med. Jour.," pt. 2, p. 29; Thompson, "Brit. Med. Jour.," July 6, 1889; Fessenden N. Otis, "Lancet," Aug. 31, 1889, p. 420; Boulby, "Lancet," May 25, 1889; Symonds, "Annals of Surg.," April, 1889; Isambard Owen, "Lancet," Jan. 19, 1889, p. 125; Cadge, "Lancet," Oct. 5, 1889, pt. 2, p. 705.

Electric Illumination of [*Electric Cystoscopy*].—The value of this—the Nitze method—(comp. "Annual," 1889, p. 165), has been proved by many writers in many countries: Nitze, Geza von Antal, Fenwick, Southam, Barling, Otis, Meyer, and Anderson quote cases illustrating the value of the method. The general opinion is reflected by Meyer, of New York, who says, after an experience of twenty cystoscopies (amongst which he discovered five tumours of the bladder, two stones, and once foreign bodies), "There is no doubt, in my opinion, and no surgeon doubts it any more to-day, that cystoscopy has a great future. Of course we have to learn yet in many respects to recognize the disease in the picture, and may often be mistaken in explaining what we see, just as that occurs to the laryngologists, and very experienced ones, with diseases of the larynx. In many obscure cases of the uropoietic system the cystoscope will render great aid in arriving at a correct diagnosis. But, to be successful

with it, it requires a close study and a great deal of personal experience."

Mr. Hurry Fenwick, after urging the necessity for unremitting practice with the cystoscope, groups the visual fallacies or pitfalls which await the explorer in the protean changes of the mucous membrane under the varying conditions of relaxation, congestion, extravasation, and infiltration, under two headings: (1,) Those encountered in the healthy bladder; (2,) Those met with in the diseased bladder.

(1,) THE HEALTHY BLADDER—(*a*,) *The Ureteral Cone.*—"The first normal pitfall to be avoided is a slightly prolapsed ureter. The vesical orifice of the ureter usually appears as a pouting thick-lipped orifice, but even in perfect health it may be seen as a red gelatinous-looking cone, more or less obtruncated. It is then very like a small sessile tumour; in fact, in one case of hæmorrhagic cystitis, I had some difficulty in dissuading the surgeon who had "discovered" the prolapse, from operating in order to remove it. The similarity is much increased by the magnifying power which the prism possesses. To recognize it, the cystoscopist notes that its position corresponds to the postero-external angle of the trigone; that the summit is slightly flattened, depressed, and occupied by a small orifice, whence tiny jets of glycerine-like fluid issue at varying intervals; and, moreover, that the apex not infrequently protrudes and recedes rhythmically. The prolapse will, I believe, be chiefly found in patients in whom the ureter is energetically contracting under a constant stimulus, such as that created by a renal stone, by calculous or tuberculous pyelitis, etc., the prolapse being in these cases analogous to the rectal protrusion due to polypi, piles, or worms. Heaped-up mucous membrane at the ureteral orifice has a similar appearance.

"(*b*,) *Rugæ.*—The healthy, lissom, inelastic mucous membrane, when folded in by the contracting muscle tunics, forms creases, plaits, and wrinkles, which are sometimes caught sight of in profile, and which then appear like rows of papillomata. By turning the prism so as to full-face them, the deception is detected. When these rugæ are inflamed or swollen, their appearance is still more puzzling.

"(2,) THE DISEASED BLADDER—(*a*,) *Rugæ.*—Not infrequently, in hæmorrhagic cystitis, parallel rows of purple or blood-red rugæ are seen, which, if caught in profile, resemble multiple villous growths very markedly. The right side of one bladder was seen to be covered with parallel upraised plicæ of a deep blood-red colour; whilst on the left side the mucous membrane was yellow, smooth, and glistening.

"(*b*,) *Polyhedral or Rectangular Quiltings of Chronic Cystitis.*—The mucous membrane is swollen and gelatinous in certain forms of chronic cystitis. It gets rucked up and appears quilted, the enclosed patches projecting forwards as globose or polypoid bodies. In several cases I have seen the surface irregularly upraised, as if by the tips of many fingers. This latter condition usually occurs at the base.

"(*c*,) *Phosphatic and Encrusted Growths* are sometimes exactly like stones, but a touch with the tip of the instrument settles the matter.

"(*d*,) *Hæmorrhages.*—These are usually observed in hæmorrhagic cystitis, and in the rare cases of purpura and syphilis. They form elongated, oval, or roundish elevations of a deep red gelatinous aspect, very similar to epitheliomata. The neighbourhood of the former is, however, usually printed with hæmorrhagic spots, streaks, and blotches. The remaining surface, moreover, is blurred and filamentous.

"(*e*,) *Tuberculosis.*—Of all the pathological changes of the mucous membrane which need most study, and in which the eye must be carefully trained, the most important is that due to tuberculous or scrofulous disease. I believe that it will be in this disease that the greatest number of mistakes will be made, for in every grade of its severity, and in every stage of its progression towards suppuration or absorption, it offers appearances which counterfeit those diseases for which the examination will be most often undertaken. Heaped-up, cockscomb-like projections of swollen mucous membrane mimic the stunted papillary fibroma. The short and tag-like streamers of necrotic tissue resemble the necrotic villi or shreddy ulceration of neoplastic surfaces, whilst the large tabs of infiltrated mucous membrane receding from an ulcer or a stripped-off surface resemble polypi or subvilloid growths."

Ought Electric Cystoscopy to supersede Digital Exploration? Can it afford us a diagnosis without a Cutting Operation?—Most agree with Dr. Nitze in his contention that digital exploration for diagnosis is, in the greater number of obscure cases, quite needless, and that the electric light is, when used with judgment and experience, quite equal to the finger. To support these statements Mr. Fenwick gives a list of the first forty-three cases in which he used the light for diagnostic purposes. These forty-three cases serve to compare with the list of forty-three published by Sir Henry Thompson to illustrate the operation of digital exploration.

The comparison of the two methods and lists permits of the following statements being made: (1,) Digital exploration is a cutting operation, needing confinement to bed. Electric cystoscopy can be performed routinely and rapidly in private or out-patient practice.

(2,) The former operation needs an anæsthetic. In the latter it is not absolutely necessary. In the greater number of cases he has neither used gaseous narcosis nor cocaine. He employs anæsthesia (*a*,) in females for delicacy ; (*b*,) in tuberculosis or similar cases where the prostatic urethra is extremely sensitive ; (*c*,) in order to make a leisurely prognosis of a discovered growth so as to determine the expediency of operating.

(3,) Digital exploration is not absolutely free from risk or hæmorrhage, and frequently either a troublesome fistula or a hyper-sensitive scar is left in the urethra. Cystoscopy is, if it be gentle and purposive, as free from risk as routine catheterism or sounding.

(4,) In most cases the educated eye is to be preferred to, and relied upon, rather than the finger. It is well known that Sir Henry Thompson trusts more to his great tactile delicacy ; but, on placing the diagnoses of these two lists side by side, it will be seen that the comparison is in favour of sight.

Sir Henry Thompson's List.	Cases.	Mr. Hurry Fenwick's List.	Cases.
Nothing Found	14	Nothing abnormal seen ..	2
Calculi	2	Calculi	2
A scale of calculous matter ..	4	Renal hæmaturia	6
Tumours	20	Tubercular cystitis	9
Prostatic	2	Hæmorrhagic cystitis	2
Subvilloid condition	1	Tumours	15
	43	Chronic cystitis	7
			43

(5,) The cystoscope affords not infrequently a sound prognosis, and intimates when to interfere and when to leave alone ; if it indicates operative interference, it also points to the path (suprapubic or perineal) best suited for access to the growth, and for its complete eradication.

(6,) It must be readily admitted that digital exploration allows of the bladder being subsequently drained ; but the rest thus afforded is not always necessary, nor is it always productive of benefit.

In what cases is the Electric Cystoscope of use?—Hæmaturia.—There are few cases more perplexing or more unsatisfactory to treat than those of hæmaturia, especially the "symptomless" variety. Very often the evacuated urine contains no clue as to the source of the blood. The colour of the hæmorrhage is deceptively variable, sometimes being of a renal, sometimes of a vesical type. In only a small proportion of cases does the microscope reveal the cause. Not infrequently bimanual or rectal examination proves valueless in the

localisation of the disease, while the sound, evacuator, and lithotrite often afford only negative results.

It is in this very class of symptomless hæmaturia that the electric cystoscope is of so much value as a diagnostic agent. A close inspection of the orifices of the ureters under electric light demonstrates at once the renal source of hæmorrhage if the blood be issuing from the kidney (*Fig.* 16), or will help us at once to detect a villous papillomata

Fig. 16.—Cystoscopic aspect of blood issuing from the right ureteral orifice (Fenwick).

and other vesical growth, the existence of which one may suspect, but which, without a cutting operation in the shape of a digital exploration, one often cannot absolutely diagnose to be present in the bladder. It will also be of service in the differential diagnosis of the various causes of vesical hæmaturia, pyuria, irritability, and pain; for a careful visual inspection of the surface of the bladder will reveal a hæmorrhagic cystitis, a calculus, an enlarged prostate, or an ulceration, as the source of the suffering and symptoms.

Renal Pyuria.—A stream of pus issuing from the ureteral orifice is not quite so readily or so certainly detected as a jet of blood, but it can be diagnosed with care. The glycerine-like stream of health is replaced by a muddy current of a colour which varies from a light straw to a darker yellow.

Renal Chyluria.—In a case under Mr. Clement Lucas, jets of milky urine were observed to be issuing from the right ureteral orifice.

Lastly, although it cannot replace the easily managed sound in the detection of calculus, it is of value in the diagnosis of encysted calculus, and in every obscure vesical disease in which other methods of examination have failed to elicit the cause of the symptoms.

Is the Cystoscope absolutely free from danger?—There is, as every surgeon is aware, some risk in the first introduction of any instrument through the deep urethra—a risk which must not be made light of. There is also some danger to be incurred in washing out the bladder for the first few times if residual urine be present; and, lastly, there are certain diseases, such as tuberculosis of the urinary tract, which resent at once any instrumental interference.

The surgeon must therefore select cases *for routine observation* with care and judgment—those which his knowledge of the idiosyncrasies of urinary disease can assure him will be suitable. He must regard the cystoscope in the same light and with the same deference that he should regard the bougie, the sound, or the catheter; for, as Sir Henry Thompson has so tersely and so wisely expressed it, "The introduction of an instrument is, more or less, an evil, never to be resorted to, unless a greater evil be present, which its employment may probably remedy."

Avoid using the cystoscope if the following conditions are present: (1,) Obvious tuberculosis of the urinary tract; (2,) *Traumatic* renal hæmaturia of recent origin; (3,) Irregularly enlarged prostates; (4,) Residual urine due to ataxia; (5,) Phosphaturia.

REFERENCES.—(Compare "Annual," 1889).—Max Nitze, "Lehrbuch der Kystoskopie," Wiesbaden, 1889; Géza von Antal, "Specielle Chirurgische Pathologie und Therapie der Harnröhre und Harnblase," Stuttgart, 1888; Hurry Fenwick, "The Electric Illumination of the Bladder and Urethra," 2nd Edit., 1889; "Brit. Med. Jour.," 1889, pt. 1, 989, 1053; Southam, "Lancet," 1889, pt. i., p. 729; Otis, "Med. Rec.," 1888, p. 493; Meyer, "New York Med. Jour.," 1888, xlvii., 426, 432; 1882, xviii., 601, 625, 645, 665; Barling, "Birm. Med. Rev.," 1889, xxv., 257–270; Grünfeld, "The Med. Press," June 26, 1889, p. 670; Newell, "Boston Med. and Surg. Jour.," 1889, cxx., 381.

Suprapubic Cystotomy (Epicystotomy—The High Operation).—Certain questions of extreme practical importance as to the technique of this operation are still awaiting mature consideration.

Is the preparatory distension of the rectum a necessity?—Some surgeons lay but little stress upon the value of rectal inflation in order to raise the prevesical fold of the peritoneum. "The manœuvre facilitates the operation, but is not a necessity to the experienced operator" says Trendelenburg, after performing epicystotomy on forty-two cases.

All agree, however, that its distension must not be carried to extremes. Especially is this the case where the prostate is abnormally

hard (viz., suprapubic prostatectomy). Dangerous hæmorrhage and even fatal results have been recorded. Thus, MM. Nicaise and Pontier report deaths from rupture of the rectum, and M. Despres stated that five deaths have already been reported to the Societé de Chirurgie. The operator, therefore, in attempting to escape the Scylla of the peritoneum, must avoid falling into the Charybdis of a ruptured rectum.

Is the "Transverse" or "Cross" incision better than the usual median longitudinal?—The former method of reaching the bladder (recommended by Günther thirty-six years ago) is advocated and practised by Trendelenburg, Willey, Meyer and others on the grounds : (1,) That the prevesical fold of peritoneum can be avoided with greater ease and certainty by it than by the median longitudinal incision ; (2,) A freer view of the bladder is obtainable ; (3,) Freer drainage is secured from either lateral end of the wound ; (4,) It is especially useful in fat patients. It is performed thus : The recti muscles and fasciæ are divided transversely as close as possible to the pubes, and while the left hand lifts away the peritoneal fold, the right carrying the knife, works closely to the superior and posterior surface of the pubes. The bladder is opened transversely. No operator would hesitate in detaching the recti, if he found he was in need of increased room, but as there is, perhaps, a greater liability to ventral hernia in

Fig. 17.—Trendelenburg's Posture (from an Article in "Arch. f. Klin. Chir.," xxxi., 3.)

the cross incision, and as the median longitudinal gives sufficient space in the majority of cases, the recommendation of Prof. Trendelenburg invariably to use the cross incision, has not as yet found favour with the profession.

What is the best position for the patient to be in during the operation?—A glance at *Fig.* 17 will show the "Trendelenburg position," which is not sufficiently known or appreciated in England. This position is preferred by many surgeons (Küster, Keyes, Lange, Gerster, and others). "It is by all means preferable to illumination of the inside of the bladder with an electric surgical light while the patient is flat on his back. The electric light ought to be used rather in the Trendelenburg posture when the trigonum Lieutaudii, usually the most interesting spot within the bladder, is not covered by blood and urine, but, being the highest point in the bladder, may be sponged and kept dry. To be entirely satisfied with the posture, it should be kept in mind that the pelvis is to be raised sufficiently high (figure). Many fail in that respect. Eigenbrodt emphasizes the fact that this elevation helps the surgeon to avoid the prevesical peritoneal fold at the time of incising the bladder."

What is the best after treatment? Shall we drain or suture?—The success of the suture depends apparently upon: (1,) age. In children under fifteen, the suture is very successful; (2,) In bladders with comparatively healthy urine and mucous membrane, the suture is to be recommended, but much depends upon the surgeon himself, the accuracy and technique of the suture. With some surgeons suture appears to be very successful. Thus, Van Ilersen quotes ten primary unions out of twelve sutured bladders, Lange seven out of eight.

Meyer lays down the following rules: (1,) If there is no catarrh of the bladder, or only a slight one, the wound of the bladder ought to be closed by primary and eventually the abdominal wound by secondary suture; (2,) If the catarrh of the bladder is serious and combined with septic suppurative pyelitis, the bladder ought to be drained; (3,) In less serious cases both methods may be combined with advantage —*i.e.*, the greatest part of the wound of the bladder may be sewn up, and only a small spot in the middle left open for passing the tube. The secret of successful drainage is in its *freedom*—whether it be carried out by the open method (without tubes), or with a T tube, or double tubes, or wick, or suction.

REFERENCES.—Jacobson, "Oper. of Surg.," 1889, p. 849; Meyer, "Lang. Arch.," xxxvi., 3, p. 514; Meyer, "New York Med. Jour.," Feb. 23, 1889, p. 197; Gerster, "New York Med. Jour.," Feb. 2, 1889, p. 133; Eigenbrodt, "Deut. Zeit. für Chir.," xxviii., p. 66; Küster,

"Sam. Klin. Vost.," pp. 267, 268; Keyes, "Jour. Cut. and Gen. Urin. Dis.," July, 1887; The Trendelenburg Posture, "Brit. Med. Jour.," Oct. 19, 1889, p. 872.

Tumours.—Which is the variety most frequently met with?—Sir H. Thompson has said that "villous growth (papilloma) is in fact of all varieties that which most commonly affects the bladder." This, Mr. Fenwick submits, is not supported by the statistics of the removal of vesical tumours, which show a very large percentage of recurrences; nor is it warranted by the number of "cures" effected. Thus, out of twenty-nine cases Sir Henry Thompson records five complete cures. Again, Guyon has reported twenty-two cases of vesical growths upon which he has operated, and only three of these were benign. Mr. Fenwick's list for this last year comprises thirty cases of vesical growths, and only two of these were benign. Moreover, in preparation of the Jacksonian Prize Essay he examined the various museums of Europe, and found one hundred and fifty to two hundred cases of carcinomatous vesical growths without difficulty, but only about fifty specimens of undoubted papillomatous growth.

Mr. Roger Williams, on making an analysis of thirteen thousand eight hundred and twenty-four primary neoplasms of all kinds consecutively under treatment at the Middlesex University College, St. Thomas' and St. Bartholomew's Hospitals, during the last sixteen to twenty years, found that in ninety cases (0·65 per cent.) it originated in the bladder. They were distributed as follows:—

Kind of Neoplasm.	Total.	Males.	Females.
Cancer	59	43	16
Sarcoma	6	5	1
Fibroma	2	1	1
Papilloma (Villous)	23	21	2
	90	70	20

What is the onset symptom?—Prof. Gross, in attempting a differential diagnosis between malignant and benign growths, asserted that if the hæmaturia preceded, with long intervals of rest, the irritability and pain, the tumour was probably of the benign type; and, on the contrary, if irritability and pain appeared first, the growth was usually malignant. This statement, which has been freely re-copied, is, we believe, inaccurate and misleading. Most of the cases we have examined comparatively early, say, within two years of onset, have had painless hæmaturia as an onset symptom; and from these and other cases we are led to believe that the onset of hæmaturia is determined rather by the softness or delicacy of the growth, and the degree

of traumatism to which it chances to be liable from its position in the bladder, than by its malignant or benign character. Moreover, the pain and irritability depend more upon the provocative power of the growth to excite reflex action than upon its nature. Thus, a firm benign growth, situated near the orifice, or so pedunculated as to readily engage the sensitive neck, will excite pain and irritability at an earlier period; or, again, any growth, by inducing localized cystitis, will evoke similar symptoms. We cannot but believe that this mistake has probably arisen from comparing symptoms, due to a hard infiltrating growth which irritates and stimulates the muscular wall long before it bleeds, with those induced by typical villous papillomata.

REFERENCES.—Hurry Fenwick, "Brit. Med. Jour.," May 4, 1889; Roger Williams, "Brit. Med. Jour.," May 25, 1889.

BLADDER (Intra-peritoneal Rupture of).

A. W. Mayo Robson, F.R.C.S.

A case of Mr. Rutherford Morison's shows that intra-peritoneal rupture of the bladder may occur from causes other than injury. A man aged twenty-five was admitted into hospital in a state of collapse with the history that he had felt something give way in his abdomen after two days' retention of urine due to gonorrhœa. Abdominal section revealed a rupture, the size of a split pea, in the upper and posterior part of the bladder, which was closed by sutures; the patient, however, died on the fourth day from peritonitis. The symptoms of traumatic rupture of the bladder are similar to those mentioned, as due to visceral lesion without external wound, under the heading of "Abdominal Injuries." Shock, which is variable, may be serious from the time of accident, or may not come on for some hours. On passing catheter, either none or a very little blood-stained urine is drawn off, unless the catheter pass through the rent; when, although urine flows, the end of the instrument can be felt to move freely in the abdominal cavity. There may be signs of fluid in the peritoneum from the first, but this is not to be relied on as an early symptom; there is usually a frequent desire to micturate. Pain is very variable, it may be absent or may be very severe from the first.

TREATMENT.—Immediate laparotomy, with closure of the rent in the bladder by Lembert's sutures, and thorough cleansing of the peritoneum.

Thin aseptic silk would seem to be the best material for sutures. Care must be taken to advoid including the mucous membrane in the stitches. The earlier the operation is undertaken the greater is the probability of success. Dr. Thomas Morton, of Philadelphia, has collected the records of twenty-seven cases of ruptured bladder treated

by abdominal section, the mortality being 62·9 per cent. He suggests the use of hydrogen insufflation as a test of rupture of the bladder.

REFERENCES.—MacCornack, "Lancet," 1886, vol. ii, 1118; Walsham, "Lancet," March, 1887; Report of "Discussion on Pathology of Ruptured Bladder," at Pathological Society, "Lancet," Feb. 5, 1887; "Annals of Surgery," Dec. 1888 and 1889; Morison, "Brit. Med. Jour.," 1889, p. 191.

BOILS.

Synopsis.—(Vol. 1888, pp. 82, 266.) **Sod. Hyposulph.**, gr. xxx. every 2 hours. *Locally*, **Ung. Ergoti**, ʒi to ʒj, with a little **Oxide of Zinc** (Bulkley); **Phytolacca Decandra**, Tinct. ɱv to x, specific in the boils that appear on the back and behind the ears.

(Vol. 1889, p. 27.) **Calcium Sulphide**, gr. $\frac{1}{10}$ to check suppuration, or gr. $\frac{1}{2}$ to hasten it.

BRAIN AND CEREBRO-SPINAL SYSTEM (Surgery of).

W. H. Elam, F.R.C.S.

It is somewhat difficult to select from the mass of literature of the year, just so much as shall illustrate the present stage of *Brain Surgery*, the work that has been done, and the scientific and practical promises and achievements. That great strides have been made is undoubted. Knowledge which was confined to a few experts is rapidly being diffused amongst surgeons generally; rules for future guidance have been deduced from published cases, and altogether there is every prospect of a brilliant future for this branch of surgery, which shall surpass in the end, all previous experiences of surgical progress.

In endeavouring to give a concise *résumé* of the work done, it will, perhaps, be most advantageous to make the following divisions of the subject, viz., (1,) Cranio-cerebral topography; (2,) Traumatisms; (3,) Cerebral abscess; (4,) The surgical treatment of epilepsy; (5,) The treatment of cerebral tumours.

I.—CRANIO-CEREBRAL TOPOGRAPHY.

As all surgical procedures must be dominated by correct anatomico-physiological knowledge, this demands first attention.

It is now well known that the so-called motor area of the brain, is located in the convolutions around the *fissure of Rolando*. Motor centres for the lower limb, the upper limb, the face and tongue, are generally recognized, although their exact limits are not well defined.

For *the lower limb* the posterior part of the superior frontal, the upper part of the ascending frontal and ascending parietal convolutions, and the upper and anterior part of the superior and parietal lobule, are the motor centres. That for the foot is in the anterior part of this area.

For *the upper limb* the middle third of the ascending parietal and

ascending frontal convolutions, that for the shoulder being highest, and that for the hand the lowest part, of the area.

For *the face* the lower third of the ascending frontal and parietal convolutions, that for the movement of the angle of the mouth being highest.

The lowest part of the ascending frontal convolution is for the tongue and lips; and that for motor speech in the adjacent part of the third frontal convolution. The area for the sense of hearing is believed to be in the posterior part of the first tempero-sphenoidal convolution. *Fig.* 18, altered from Reid and Treves, will give some idea of these convolutions and their relation to the cranium.

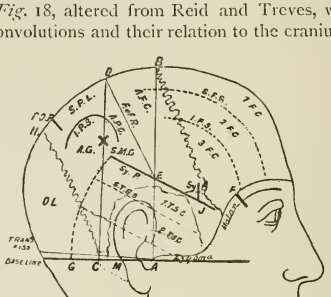


Fig. 18. Diagram to show the relations of the brain to the skull (modified from Reid & Treves).

J. B.—Coronal suture. B.—Bregma. F.—External angular process. H.—Lambda. H. C.—Lambdoid suture. J.—Pterion. M.—Mastoid process. X.—Parietal eminence. Sy. A. Sy. P.—Anterior and posterior limbs of Sylvian fissure. F. of R.—Fissure of Rolando. A. F. C., A. P. C.—Ascending frontal and ascending parietal convolutions. S. F. S., I. F. S.—Superior and inferior frontal sulci. 1 F. C., 2 F. C., 3 F. C.—Frontal convolutions. S. T. S., I. T. S. S.—Superior and inferior tempero-sphenoidal sulci. 1 T. S. C., 2 T. S. C., 3 T. S. C.—Tempero-sphenoidal convolutions. I. P. S.—Intra-parietal sulcus. S. P. L.—Superior parietal lobule. S. M. C.—Supramarginal convolution. A. G.—Angular gyrus. P. O. F.—Parieto-occipital fissure. O. L.—Occipital lobe.

To be able to find the exact spot on the surface of the scalp or cranium corresponding to these centres is, of course, of vital importance. Various methods of measurement have been devised, but owing to the great variations in the grade of development of the convolutions and even the anterior part of the brain, much difficulty has been experienced in making an exact cranio-cerebral map. *Fig.* 19

gives a fairly correct idea of the method generally in use, and reference to others will be given.

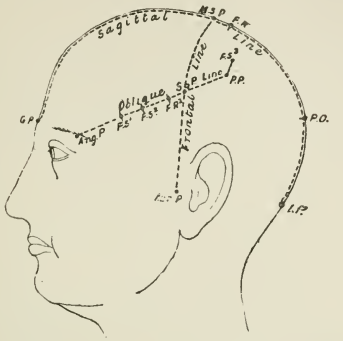


Fig. 19. G P.—Glabellar point; glabella opposite superior border of orbit. I. P.—Inial point, at external occipital protuberance. M. S. P.—Midsagittal point; midway between G. P. & I. P. Ang. P.—Angular point; external angular process opposite upper border of orbit. Sq. P.—Squamosal point: intersection of oblique and frontal lines at junction of middle and lower thirds of latter. P. P.—Parietal point; termination of oblique line equidistant with F. S.² from squamosal point. Aur. P.—Pre-auricular point; depression in front of tragus at level of upper border of external auditory meatus. F. S.¹, F. S.², and F. S.³—Commencement, bifurcation, and termination of fissure of Sylvius. F R.¹ and F. R.²—Upper and lower extremities of fissure of Rolando. P. O.—External parieto-occipital fissure.

Anderson and Makins have made experiments, and the following extracts from their paper are given with cuts to illustrate their statements.

The plan adopted was to expose one half of the dura mater by removal of the corresponding half of the skull cap, and to trace the sulci on the surface of the dura, with thick, coloured mucilage. The skull-cap being replaced, these coloured lines marked out on its inner surface, lines corresponding to the sulci, and a series of perforations through the transferred lines showed the position of these sulci upon the surface of the bone. Indications obtained by this method led to the projection of certain fixed lines.

The guiding lines devised for this localization of the fissure points were three in number:—one, *sagittal* and mesial, extending from the glabella at a point midway between the highest points in the supraorbital arches to the external occipital protuberance; the second, nearly *vertical* in direction, running from the mid-point of the sagittal line to the depression immediately in front of the tragus, at the level of the

upper border of the meatus; the third passing obliquely from the most prominent point of the external angular process, at the level of the superior border of the orbit, to the junction of the middle and lower thirds of the frontal line, and prolonged for about an inch and a half behind this. In the adult it usually runs a little above the highest point of the squamous suture, and nearly parallel to a line drawn from the edges of the upper teeth to the tip of the mastoid process. The lines designated respectively by the names of "sagittal," "frontal," and "squamosal," and the points corresponding to their extremities, as glabellar, midsagittal, inial, pre-auricular, angular, squamosal, and parietal are shown in *Fig.* 20.

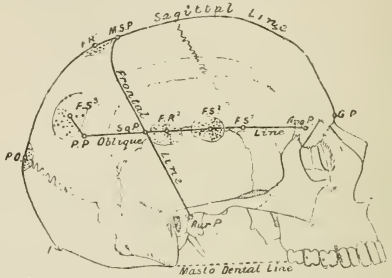


Fig. 20. Drawing of a skull, showing variations of position in bifurcation and termination of fissure of Sylvius (after ANDERSON & MAKINS) of the two extremities of the fissure of Rolando and of the parieto-occipital fissure. In the areas of dotted points, the dots indicate the variations in different skulls, and the small central circles indicate the focal points of these areas.—F. S.^{2}, F. S.^{3}, F. R.^{1}, F. R.^{2}.

F. R.^{1}, F. R.^{2}.—The two extremities of the fissure of Rolando. F. S.^{1}, F. S.^{2}, and F. S.^{3}—The beginning, bifurcation and termination of the fissure of Sylvius. P. O.—The parieto-occipital fissure. G. P.—Glabellar point. I.—Inion. M. S. P.—Midsagittal point. Aur. P.—Pre-auricular point. Ang. P.—Angular point. Sq. P.—Squamosal point. P. P.—Parietal point.

The results obtained were: (1,) The cranial sutures, ridges, and eminences, accepted as a guide to the convolutions and sulci, are sufficiently variable as to their position in relation to each other and to the cranial walls, as a whole, to introduce an undesirable source of fallacy in brain surgery. Thus, the summit of the parietal eminence, which is usually about midway in a line passing between the pre-auricular point and the sagittal suture, has a range of variation of nearly half an inch in the vertical, and an inch in the horizontal direction, (after correction has been made for the varying dimensions of the skulls). The distance of the bregma from the glabella, which averages two-fifths of the length

of the sagittal line, has a corrected range of variation of a little over half an inch. The distance of the apex of the lambdoid suture from the external occipital protuberance, usually a little more than one-fifth of the length of the sagittal line, varies to the extent of seven-eighths of an inch. The squamous suture and the temporal ridges are equally uncertain as to place, the former varying to the extent of three-fourths of an inch, the latter to one inch, in the distance from the pre-auricular point in the frontal line. The level of the spheno-parietal suture was no less variable. The frontal eminence, like the parietal boss, may be very imperfectly marked, and hence difficult to localize, and exhibits similar variations of position, both in the vertical and horizontal direction which do not appear to be related to corresponding alterations in the conformation of the subjacent portion of the brain; lastly, the mastoid process not only presents considerable differences in size (three-fourths of an inch in width at its base) in different crania, and a complete absence of relation to cerebral development, but in the living subjects is usually observed as to its posterior limits by the insertion of the sterno-mastoid muscle. The eminences most easy of definition through the scalp, are the glabella, the external angular process, and the external occipital protuberance; and although, like the rest, these are subject to irregularities of position, the variations are too small to interfere seriously with the value of the points as surgical land-marks.

(2,) The relations of the cerebral convolutions and sulci to the cranial surface and to each other, vary within rather wide limits in different subjects, and even upon the two sides of the same head; it is hence dangerous to claim for any portion of the brain a fixed and invariable point of localization. All that is possible for the anatomist to do, is to indicate upon the scalp an easily-defined spot, which shall hold a central position with regard to all the probable variations of the brain locality under consideration.

(1,) *Fissure of Rolando.*—The upper extremity, carried for convenience of admeasurement as far as the longitudinal fissure (in line of the sulcus), was found to lie in all cases between the midsagittal point and a point three-quarters of an inch behind it. Its distance behind the midsagittal point, however, bore no constant relation to the length of the sagittal line, and hence the central spot for the application of the trephine may be most safely fixed at three-eighths of an inch behind the midsagittal point.

The lower end of the sulcus, carried into the fissure of Sylvius, lies in the squamosal line between the junction of this line with the frontal line (squamosal point), and three-quarters of an inch in front of this. The centre of the trephine may hence be applied in the squamosal

line, three-eighths of an inch in front of the squamosal point. In four instances the sulcus really joined the horizontal limb of the Sylvian fissure.

(2,) *Fissure of Sylvius.*—The place at which the frontal and tempero-sphenoidal lobes appear to separate when seen from the lateral aspect of the brain—the so-called "commencement of the fissure of Sylvius"—can scarcely, from its very nature, be fixed with complete exactness, but it may be computed with sufficient accuracy for all practical purposes. It was found to lie in the squamosal line between one and one-eighth and one and a half inches behind the external angular process, or about five-twelfths of the distance between the point and the frontal bone.

The bifurcation of the fissure lies in the squamosal line at a point from one and a half to two inches behind the external angular process, or at seven-twelfths between this process and the frontal line. The course of the horizontal limb, from the bifurcation to the frontal line, corresponds closely to the squamosal line, and a continuation of this backwards for an equal distance behind the frontal line (to parietal point in diagram); it then turns upwards for about half an inch in a direction parallel to the frontal line. The mode of termination of the fissure is, however, so uncertain that a circle of an inch in diameter failed to cover all the variations in the twenty subjects examined. The parietal eminence is nearly always closely related to the point in question.

(3,) *The external parieto-occipital* fissure, joins the longitudinal fissure at a point averaging seven-twelfths of the distance measured from the midsagittal point to the external occipital protuberance, and lies near to the apex of the lambdoid suture. In operations in the neighbourhood of the longitudinal fissure, it is, of course, necessary to take into consideration the width of the superior longitudinal sinus and its frequent deviation towards the right side in the posterior half of its course.

Sensory Cortical Centres.—Dr. Hughes Bennett summarises his paper on "Excessive Sensory Cortical Discharges and their Effects," as follows: (1,) In a given series of epilepsy or epileptiform attacks there are a certain percentage in which a pronounced feature consists of an aura of one of the special senses. In five hundred cases there were, in round numbers, an aura of the sense of touch in 10 per cent., of sight in 3 per cent., of hearing in 1·5 per cent., of smell in 0·75 per cent., and of taste in 0·75 per cent.; (2,) These auræ take the form of the development of crude subjective sensations of one of the special senses, and consist of a sudden attack

of exaggerated sensation of pain, light, noise, smell, or taste; (2,) These exaggerated sensations of sense are immediately succeeded by the opposite condition, viz., by a temporary abolition or diminution of the special sense previously affected, which results in anæsthesia, amblyopia, deafness, loss of taste and anosmia; (4,) These facts seem to indicate that each of the special senses is separately represented in the cerebral cortex, and that each of them is liable to disease. When by irritation they are in a hyper-physiological condition, they discharge their respective functions, the result being a crude subjective sensation of the corresponding sense. When destroyed or exhausted, the function is abolished or temporarily depressed; (5,) The sensory cortical centres thus obey the same general laws in their relations to disease as do the motor cortical centres.

One or two observations may not be out of place in regard to the general diagnosis of brain disease.

Mr. Berry examined four cases of double optic neuritis from cerebral disease. In each, the acuity of vision was perfect and no light-difference defect was discoverable. This fact establishes a distinction between ordinary optic neuritis and that accompanying cerebral disease.

Severe brain symptoms, such as disturbance of sensation, convulsion, dilatation of pupils, ptosis, paresis of limbs, etc., have been observed in the course of acute inflammation of internal ear, which have been at once relieved by paracentesis of the membrana tympani.

Differences of temperature on two sides of the body symptomatic of Cerebral Disease.—Prof. Horsley states that an analysis of eighteen cases observed by him, proved that notable asymmetry of temperature of the two sides of the body occurred when a lesion was situated in what he termed the corpus striatum frontal plane of the hemisphere which passes through the ascending frontal gyrus. The occurrence of a lesion in other parts of the hemisphere was not accompanied by any change of temperature on the opposite sides.

Dr. W. Hale Smith performed a series of experiments on rabbits to ascertain the influence on the bodily temperature, of lesions of the corpus striatum and optic thalamus. The lesion was made by plunging a hollow needle vertically down to the base of the brain (after trephining), and a wire then made to project laterally so as to destroy the ganglia without much damage to the upper part of the brain. The normal temperature of rabbits was found to be between 101° and 103° F. The adminstration of ether did not produce an abnormal temperature. From lesions of the white matter only, he concluded

that they are incompetent to produce a rise of temperature unless they touch the grey matter of the central ganglia. From lesions of the corpus striatum in twenty-three cases he found that a rise of temperature of from 3° to 5·2° was produced, and that it took place in from three and a half to four hours after the experiment. The rise lasted on an average fifty-eight hours. Lesions of the optic thalamus produced a rise of temperature in all cases, but was neither so high nor lasted so long as lesions of the corpus striatum. The difference in the temperature of the two sides of the body was ascertained in fifty cases, and it was found that the temperature on the side of the lesion was the same as on the opposite side; thus it would appear that the nerve fibres which modify the temperature in rabbits (unlike those in man) do not cross.

Diagnosis of Cerebral Cysts.—Prof. Edmond Souchon suggests that in cases in which the diagnosis of cyst or abscess of the brain is doubtful the brain may be explored by a fine aspirating needle, introduced through a hole made in the skull with a watchmaker's drill. Care must be taken to prevent the "bit" of the drill penetrating too far. The hole in the skull should be large enough to admit a needle twice the size of the ordinary hypodermic needle.

REFERENCES.—"Lancet," July 13, 1889; "Brit. Med. Jour.," April 6, 1889; "Brit. Med. Jour.," vol. i., p. 1406, 1889; Bergmann, "Hirnkrankheiten," 2nd Ed.; "Brit. Med. Jour.," vol. i., p. 1406, 1889; Journ. of Anat.," April, 1889; "Brit. Med. Jour.," June 1 and 22, 1889.

II.—TRAUMATISMS.

Dr. B. Kœrber has collected and made drawings of a number of skulls which have been fractured by blunt force. He divides them into two groups; one in which the force was applied to both sides of the skull—bilateral compression, and one in which the force was applied to only one surface of the skull. His conclusions as to the direction of the fracture in one or the other group, the differentiation of one from the other, and the importance of it from a medico-legal point of view, are highly interesting, but too extensive to be given here.

The Diagnostic Value of Hæmorrhage from the Ear in Fracture of Base of Skull.—Dr. Charles D. Bennett, New Jersey, U.S., concludes: (1,) That hæmorrhage from the ear is in itself no evidence of fracture of the base; (2,) That hæmorrhage from the ear, even in conjunction with other symptoms, must only be regarded as presumptive evidence; (3,) That no such diagnosis should be made until the membrana tympani had been examined; (4,) That the membrana tympani, being unbroken, the bleeding is not due to a fractured base; (5,) That all the signs of fractured base may be present with mere concussion of

the brain, and that therefore the two injuries cannot always be differentiated ; (6,) That many cases now on record, of recovery after fracture of the base, were cases of concussion only.

Trephining for Traumatic Lesion.—Dr. Seidler, in making an analysis of thirty-eight cases of traumatic lesions of the skull, states : (*a*,) Indications for primary trephining are those pointing to hæmorrhage from middle meningeal artery ; (*b*,) Trephining is not indicated in cases of subcutaneous fracture, unless there be signs of hæmorrhage. Depression of fragments is not in itself an indication ; (*c*,) In cases of compound fracture of skull, primary trephining should be done in order to arrest hæmorrhage, or for antiseptic purposes. In these cases loose fragments should be removed, depressed pieces elevated, and sharp points taken away ; (*d*,) Secondary trephining may be done if there be symptoms of meningo-encephalitis or signs of irritation (epilepsy) depending upon depressed fragments. In cases of wound of sinuses plugging should be resorted to.

Hæmorrhage.—Cases of recovery after trephining for traumatic hæmorrhages are extremely interesting. The following cases reported during the year show that the hæmorrhage may be *subcranial*—between the bone and dura mater, *subdural*, and *cerebral*, the latter being due to brain laceration. The hæmorrhage may or may not be associated with scalp wound, evident fracture, or undiscoverable fracture. As will be seen, the recovery of consciousness after the injury—if lost, succeeded by an interval of consciousness and then deepening insensibility, is not always to be looked for, but the intensifying of the symptoms of compression was a constant symptom. It has been shown ("Medical Annual," 1889) that the interval of consciousness, however, may be from ten minutes to nine days. The larger the vessel ruptured the more rapidly the blood will be poured out, and the more sudden and intense the symptoms.

In most cases there is inequality of pupils, but in Mr. Croft's case they were alike and contracted. Paralysis and convulsions are frequently seen. In Mr. H. Allingham's case the convulsions commenced in the face, then passed to the neck, arm, and leg. Where there is laceration of the brain as well as hæmorrhage there will be a rise of temperature, as in Mr. Bellamy's case.

Great difficulty has been experienced in stopping the hæmorrhage from the bleeding meningeal vessels, by means of compression, ice, ligaturing the carotid vessels, etc. Mr. Croft had to resort to plugging the wound-cavity with antiseptic sponges, to which a string was attached and brought through the wound.

REFERENCES.—"Deut. Zeit. fur Chir,." B. 29, p. 546 ; "Med. News,"

Dec. 22, p. 693, 1888; "Vratch," No. 2, 1889; "Lancet," Jan. 19, 1889; "Brit. Med. Jour.," Jan. 12, 1889; "Lancet," June 15, 1889; Lancet," April 20, 1889.

III.—Abscess of Brain.

Prof. von Bergmann believes that primary abscess of the brain never occurs. He does not think that tubercle often leads to abscess. The metastatic abscesses found in deep parts of the brain he does not refer to.

The division is into traumatisms (injury to soft parts, or bones, or brain), and purulent inflammatory processes in or around the bones of the skull (middle ear, mastoid, nose, etc.), or in the course of the lesser circulation,—abscess of lungs, etc.

A traumatic abscess never occurs when the fracture is simple, that is, does not communicate with any one surface. The most frequent cause of brain abscess is suppurative disease of middle ear. More than 60 per cent. of these abscesses are found in the tempero-sphenoidal lobes, and about 20 per cent. in the cerebellum.

If the disease commence on the surface of the petrous bone,—the tegmen tympani, the temporal lobe will probably be the seat of the abscess; but if in the mastoid bone, the probabilities are in favour of the cerebellum being the part affected. The former is more frequent in early life, the latter in adulthood. Briefly, brain abscesses manifest three groups of symptoms: (*a*,) Those characteristic of pus in the body; (*b*,) Those of intra-cranial pressure, this being in direct ratio to the size of the abscess; (*c*,) Those of disturbance of the function of the affected part of the brain.

It must not be forgotten that a very slow pulse and subnormal temperature are sometimes found associated with suppurative processes in the brain.

Bergmann lays stress on the fact that abscess of the brain can only have a fatal termination if untreated by operation.

The most significant symptom of increased intracranial pressure is headache—a persistent headache, varying in degree, always worse when the patient's temperature is raised. Everything which can increase intracranial blood-pressure—use of alcohol, too low position of head, etc.—increases the pain. In middle-ear cases the headache is more fixed and localized. It is increased by percussion over the affected area.

Marked alterations of pulse and respiration rate, a pulse even as slow as 30, and Cheyne-Stokes' respiration with coma, have been noted. These alarming symptoms may shortly subside, however, and such changes for the better and worse are much more common

in abscess than in brain tumour. Choked disc is also less frequent in cases of abscess.

Localization symptoms are often conspicuous when the abscess is in the motor area, the reverse when in the frontal, temporal, or occipital lobes. The local disturbances may be easily confused with those caused by simple degenerative processes (softening), such as in all probability are actually taking place around the abscess. In case the abscess subsides into inactivity and is followed by absorption and contraction, the local symptoms may much improve. The pus collecting in the depths of the hemispheres may only separate the motor impulse conducting paths, without materially affecting their integrity. So long as the gray matter is undestroyed, the collection of pus may assume large dimensions, even involve almost an entire hemisphere, and still no intense motor disturbance appear. But the nearer it approaches the cortex, and the more destruction it causes there, the more we may expect motor disturbances.

Like others, Bergmann lays considerable stress on local elevation of temperature over the abscess. General experience shows this to be a sign of great value when met with, but one, the absence of which need by no means negative a diagnosis if made on other rational grounds.

The same writer also maintains that there is less probability of early recognition of abscess in the frontal lobes, since it is well known that these may be almost totally destroyed without symptoms.

Certain peculiar features are alleged to pertain to abscess in the *temporal region*. Thus, Wernicke has stated that there is a peculiar disturbance of speech which points especially to this lobe as the locality of the disturbance. This is the confusion of correct with incorrect or fictitious ("*erdichteten*") words ; it is a species of aphasia implying interruption in co-ordination which results from trouble at this point.

Abscesses in the cerebellum for the most part go unrecognized. Frequent and severe attacks of vertigo, along with headache, loss of sensibility and of motion, are indications not usually lacking.

Indications have already been given as to locality for applying the trephine where the abscess is cortical (*Vide Figs.* 18, 19, and 20, *supra*).

For brain abscesses due to middle ear disease, Bergmann thinks the best position for application of the instrument is above and behind the ear. Draw a line from the lower border of the orbit to the middle of the external ear, and continue it backward. Four centimetres back from the external auditory meatus erect a perpendicular to this line, and at a point four to five centimetres above the first ; on this

second line, the temporal lobe will be reached, without danger of injuring the posterior branch of the middle meningeal artery—a danger nearly unavoidable if the trephine be applied just above or a little in front of the ear.

Macewen has proposed to make the first perforation through the squamous bone six centimetres above the ear, and then to follow with a second counter-opening on a level with the floor of the abscess, wherever this may be. Numerous cases are on record where death has resulted from failure to make this second opening (Nancrede), although Bergmann considers such thorough drainage inadvisable, holding that a single opening is sufficient if drainage is favoured by position; irrigation, even in his opinion, being at times injurious.

For trephining the mastoid bone Dr. Mitzkuner drags the auricle well forward, bringing into view a cutaneous fold just behind it, under which an osseous ridge can be felt. The shallow depression separating the ridge of bone from the beginning of the base of the mastoid process is the point for applying the trephine—by this plan the transverse sinus is avoided.

The following cases will illustrate these points more fully :—

Abscess in motor area (traumatic). Mr. J. H. Morgan related to the Medical Society the case of a boy who fell from a height, striking his head against a baulk of timber with projecting pegs. There was no detectable injury to the bone beneath a triangular scalp wound. On the fourth day after the injury the boy had a convulsion which left his leg and arm perfectly paralyzed. Next day the bone was exposed, and at a distance of two inches from the middle line, and vertically above the right ear, a piece of bone the size of a shilling was found depressed ; this was elevated, by the aid of the trephine ; through the hole in the dura mater thick pus exuded. The wound was drained and dressed with iodoform, the patient fully recovering.

Terrillon, *a propos* of a case of abscess of the surface of the left ascending frontal convolution, shows that we do not yet perfectly understand the causes of them, as in this case there was no evidence of injury. Nor do we, in all cases, feel able to explain the existence of aphasia.

Several cases were mentioned in the discussion which followed the report of Terrillon's case ("Societé de Chirurgie") which illustrate this uncertainty.

Two cases of abscess of brain are reported, one by Dr. Tyrell Brooks, in which an abscess was found over the left tempero-sphenoidal lobe at the necropsy, for which no cause could be found except a three

years' previous pneumonia, explainable only on the theory that the abscess had been latent for a corresponding period.

The second case is by Dr. Cameron Kidd. In this trephining was performed in the neighbourhood of a scar on the forehead, and a large amount of offensive matter let out from the left frontal lobe. No cause except the old injury could be assigned. The patient died in five days.

The possible prolonged latency of abscess of the brain after injury, is referred to by Bergmann in "Hirnkrankheiten," p. 140, 2nd edition.

Mr. Jordan Lloyd had under his care a man, aged twenty-nine, upon whom he operated in October last for cerebral abscess, secondary to middle ear disease. At the time of operation the patient was almost moribund, and the only localizing symptom present was an aphasia of a few hours standing. The skull was trephined an inch above the left auditory meatus, and all the tissues down to the brain were found to be healthy. An abscess containing about four ounces of stinking pus was opened in the tempero-sphenoidal lobe, and the patient made a practically uninterrupted recovery.

Bergmann reported a case of a man, æt. twenty-nine. For years he had been subject to a discharge from the right ear. For three weeks previous to his admission to the hospital he suffered from severe earache and vertigo, and for several days intense headache on the right side. On admission there was hebetude, increased temperature, respiration 24, pulse 50 per minute, difficulty in answering questions, paresis of left arm, and spasm of right facial muscles. Suppuration of mastoid was excluded by absence of pain on pressure, swelling and cutaneous œdema. A large piece of bone was removed from a space limited by two tangents, one drawn from the posterior border of the auricle and one from its highest point, these meeting at a point above and anterior to the posterior angle of the parietal bone. The dura mater when exposed pulsated and appeared normal. When incised a soft cerebral substance was forced out, and after the third incision into the latter 30 cc. of yellow fœtid pus was evacuated from a smooth cavity. This cavity was washed out with iodoform ether; a drain was introduced, and around the drain iodoform gauze was loosely packed. The recovery was uninterrupted.

Other cases of successful operative interference for abscess of brain are reported by Dr. Douhoff; a case of abscess caused by a speculum of bone, resulting from fracture of squamous and parietal bones.

Mr. C. B. Kestley, traumatic abscess, and one of supposed tubercular abscess, in which the patient died after trephining.

Traumatic Subdural Abscess.—Sir William Stokes concludes a

paper on this subject with the following propositions: (1,) That after the primary symptoms of cerebral traumatism have subsided there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formations whatever; (2,) That their appearance is, as a rule, sudden, and if uninterfered with they run a rapidly fatal course; (3,) That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition; (4,) That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation; (5,) That both as regards colour and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilm's case, published by Rose, of Berlin, they may become transparent; (6,) That antisepticism has largely diminished the risks of the operation of trephining; (7,) That, having regard to the great mortality of cases of cerebral abscess when uninterfered with—viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*; (8,) That, in the case when the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed; (9,) That by the adoption of this measure the necessity for multiple trephine openings may be largely obviated; (10,) That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation; (11,) That drainage is desirable in the after-treatment of such cases; (12,) That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.

REFERENCES.—Bergmann, "Hirnkrankheiten," 2nd Ed.; "Arch. für Chin. Chir.," B. 36; "Annals of Surg.," vol. ix., p. 371; "Brit. Med. Jour.," March 9, 1889; "Rev. de Chir.," p. 691, *et seq.*; "Lancet," vol. i., p. 216; "Brit. Med. Jour.," April 20, 1889; "Annals of Surg.," vol. ix., p. 340; "Annals of Surg.," vol. x., p. 119; "Lancet," vol. ii., pp. 595 and 643; "Dublin Jour. Med. Sci.," p. 282.

IV.—Surgical Treatment of Epilepsy.

Considerable attention has been directed to the operative treatment of this affection. At present it is impossible to say what are the characteristics of an epilepsy that will probably be cured by removing a portion of the motor centre indicated. Here it is perhaps necessary to premise that attention is directed exclusively to non-traumatic epilepsy, and so far as possible, epilepsy which is not caused by tumour.

No attempt can be made to form a division of epileptics from a surgical point of view. No doubt the cases most suitable for operation and giving the most promise of successful treatment, are those classed

as Jacksonian epilepsy (*epilepsie partielle*). What pathological changes take place in the cells of the motor area of an epileptic cannot now be stated. In some cases when a complete microscopic examination has been made, changes have been discovered in the neuroglia (Pechadre, *loc. cit.* p. 33, Essay), or in the large multipolar cells.

According to the view propounded by Hughlings Jackson in the highly interesting address given before the British Medical Association last year, we may expect to find changes in the nerve centres in the interior horns of the cord or their analogues in the base of the brain, in the mid-motor centre (Rolandic region), or in some part of the prefontal lobes. Only those cases however in which it would appear that ablation of the *discharging centre* in the motor area of the cortex is likely to affect a cure, are suitable for operation. Of course, by ablating the motor centre one substitutes a corresponding paralysis for the painful and terrible epileptic attack. Where the *aura* commences in the thumb, as is most frequently the case, it would be suitable to remove a large portion of the motor centre for the upper limb, or when it commences in the great toe, as in the case referred to below, the motor centre for the lower limb should be removed.

In these cases there is a well marked *aura*. This may commence in the thumb,—most frequently, the great toe, rarely the muscles of the face, the tongue, or in one of the senses as noted above. Commencing generally in one group of muscles the convulsion soon extends to other groups, finally invading the whole side, or extending over the whole body, but always being most marked on the commencing side or in the commencing group of muscles. As a rule, in the early days, there is no loss of consciousness. The fit may last a few seconds or a few hours. When the fits are severe, however, and consciousness is lost for a prolonged period, if the onset and sequence of the fit be carefully watched, the predominence of the initial group-convulsion will be invariably observed. The convulsions are tonic and clonic. Thanks to the work done by Ferrier, Jackson, and Horsley, these convulsions, whether general or limited, are interpreted as manifestations of a pathologic condition of the cortex at a point which is in many cases determinable. In some cases there is permanent feebleness or paralysis of a group of muscles, a whole limb or side, but in these most probably there is a tumour, certainly some irritation and destructive lesion of the motor centre implicated. The great distinguishing symptom, however, between Jacksonian epilepsy and common epilepsy is that the convulsion is distinctly limited at its onset in the manner already stated.

When the three symptoms, local persistent paralysis, convulsions with a clear aura, and double optic neuritis co-exist, a cerebral tumour in the Rolandic region is indicated. When there is an epileptic attack with clearly defined aura and limited in its initial stage to a group of muscles, without permanent paralysis, some ill-defined and little-understood lesion of the corresponding motor area is indicated, and this motor should be ablated. It cannot, in the present stage of our knowledge, be shown what difference exists, if any, in the pathological conditions of common epilepsy and Jacksonian type of epilepsy, without gross lesion. The one practical consideration is that the latter appears amenable to operative treatment. Cases of Jacksonian epilepsy have been reported in which after ablation of the motor centre indicated, there has been, after the lapse of a longer or shorter period, a recurrence of the symptoms. If there be a return of the symptoms a second operation could be performed, the exact localization of the aura being determined by stimulating the exposed cortex with electricity. The following cases are illustrative of what may be hoped for.

Dr. Berdandi related at the Italian Congress a case of a man, aged thirty-seven, the subject of violent epileptic fits and an intermittent complete hemiparesis. At the operation no tumour could be found in the motor area, although this portion of the brain was freely incised. The patient was completely cured, and Berdandi attributed the cure to the relief of what he termed the circumscribed œdema of this area. He thought trephining should be the treatment for epilepsy, and that exploratory trephining should be a recognized operation.

In a case which came under the notice of Drs. Lloyd and Beaver, the patient, aged thirty-five years, had, when fifteen years old, a blow upon his head with a ball bat. He became unconscious and was confined to bed for one week. His fits did not begin until six years afterwards. At this time they occurred exclusively at night; but nine months after the appearance of what was supposed to be the first (from the fact of his having bitten his tongue) they commenced to occur during the day. They then gradually increased until they reached twenty-eight in the day, and the patient seemed to be passing into a true epileptic status. The onset of these seizures—upon which special stress was laid, both in the diagnosis and subsequent surgical treatment—was always the same, and verified by numerous observations. The left hand, especially the two fingers, was the seat of the signal symptoms, both sensory and motor; and however varied the extent of the convulsions were in different seizures, there was never any variation from this constant irritation. In Dr. Lloyd's opinion the nature of the irritative

lesion was not very clear, although he was inclined to think that it might be old scar tissue and thickened membranes, the results of his injury. The operation performed by Dr. Beaver consisted in the removal with an ordinary sized scalpel, held perpendicularly, of three pieces of brain tissue, each three-quarters of an inch in depth, one half an inch square in size, from the back of the fissure of Rolando, and two smaller portions anterior to the same fissure. The report of the case three months after, states that he has had no convulsive seizures, and has recovered somewhat the paralytic conditions. The muscles specially paralyzed in the arm are the flexors of the fingers.

Mr. Victor Horsley, referring to the question of recurrence of epilepsy, cited a case in which the facial region had been excised after stimulation with faradism. Lingual equilibrium had been obtained, which had not been present before the operation ; and the fits had been absent for three weeks, when they had recurred. He also referred to another case in which, after excision of a focus, there had been no fits for two years ; and another, operated upon twenty-three months ago, in which there had been no fits since. He would not, however, venture to say that the patient was cured. In his opinion five years should first have elapsed. To free the patient from epileptic attacks for six months or two years would, however, restore mental power, and was no insignificant result. He considered that the operation should be done as early as possible. The faradization of the cortex for the purpose of diagnosis was a step in advance. He had himself irritated the corpora quadrigemina in one case without unfavourable symptoms.

Dr. Ferrier has had cases of recurrence of the epileptic attacks, and one case was trephined twice without any benefit. Dr. Ferrier thinks that the more chronic the case, the greater is the danger of recurrence. One of his cases was cured, in which there was three thousand fits in fourteen days.

REFERENCES.—"Amer. Jour. of Med.," Nov., 1888 ; "Brit. Med. Jour.," Aug., 17 ; Lloyd and Beaver, "Int. Jour. Med. Sci.," Nov., 1888 ; "Rev. de Chir," 1889, p. 777.

V.—TUMOURS OF BRAIN.

In regard to these it is not always easy to diagnose between neoplasms, whether of the brain, its coverings, or its bony cavity, and tubercle or gummata. To distinguish between affections of the brain and dura, Roswell Park says, that in the latter the symptoms tend to diffuse and invade neighbouring groups of muscles. They have never the localization and the measured and purposed character of contractions which belong to lesions of the cortex.

They frequently become transformed into permanent contractions. The reflex vaso-motor disturbances due to irritation of the nerves of the dura mater consist in spasms, or congestive paralyses of the cerebral and ocular vessels, either on the same or the opposite side. These facts are important to pathologists, as they show the great influence of irritation of the nerves of the dura mater on cerebral vascular conditions and on the organs of sense, and shed light on the causation of secondary effects in cerebral traumatism—that is, on the congestions and inflammations of the cerebral membranes. Destructive lesions cause local anæsthesia of the dura mater.

The principal features of a brain tumour which produce symptoms are : (1,) Location ; (2,) Size ; (3,) Character ; (4,) Rapidity and manner of growth ; (5,) Extent to which it affects the surrounding brain.

The ways in which a tumour may produce symptoms are : (*a*,) By increased pressure ; (*b*,) By direct influence on the brain tissue.

When a tumour is in the cortex, the surrounding brain gradually accommodates itself, to a certain extent, to the increasing pressure ; at the base and in the neighbourhood such a condition is not usually met with.

When a part of the cortex is destroyed, the remaining part assumes a certain portion of its function. The symptoms produced by these changes may arise either from loss of function or from irritation. Nerves may be compressed where they pass through the dura, or directly in their course, or by enlarged blood-vessels. Convulsions may occur from tumours in any part of the brain ; optic neuritis is by no means common. The chief localizing symptoms are paralysis of the cranial nerves, hemiplegia, monoplegia, hemianæsthesia, partial spasms, reeling gait, aphasia, and hemiopia. In the frontal lobes, the corpora striata, and the optic thalami, brain tumours are frequently latent. When an individual suffers from constant headache that is not relieved by ordinary methods of treatment, he should be examined for brain tumour.

Two cases, one of tubercle and one a gumma, are given below. Bergmann gives four cases of operative interference for tubercle, two being successful and two followed by death.

Tumours of a syphilitic character are not likely to call for operation ; these will be cured by iodides. The history of the case would lead one to try the effect of antisyphilitic treatment before resorting to a more radical process. Cases, however, of successful removal of gummata have been reported—two by Macewen. (*Vide* also case *infra*.)

The division of tumours into encapsuled, and diffuse or infiltrating, their accessibility, the methods of operating, the dangers of operating

(viz., hæmorrhage and œdema), the extent to which brain substance may be removed, and the symptoms and localization of the growths, need not be discussed here.

A good *résumé* of the subject is given by R. Park, already referred to, and in the "Rev. de Chir.," p. 73. E. von Bergmann's "Chir. Behand. von Hirnk.," 2nd edition, 1889, and Dr. Pechadre's "Trépanation dans les Epilepsies Jacksoniennes," 1889, give the fullest information on the subject.

In cases of deep coma with brain tumour, Bergmann says no operation should be undertaken, as severe œdema of brain is indicated, and this œdema would rapidly supervene after operation, proving fatal in from six to twelve hours. Successful operations, however, have been performed even in the above condition.

It would appear safest to ligature a large vessel with catgut. Very large masses of brain substance may be removed in the frontal region. It is thought, that the larger the mass of brain substance removed, the less the likelihood of *hernia cerebri*.

Tumour of Tempero-sphenoidal Lobe.—Drs. Hughlings Jackson and Beevor, at the Medical Society of London, read notes of a curious and rare case of epilepsy, associated with tumour in the tempero-sphenoidal lobe. Dr. Jackson said the case was one of organic brain disease, with important bearing on the localization of the faculties, and was in conformity with Dr. Ferrier's experiments. The patient, a woman, aged fifty-three, was under observation from November 25 to December 31. Thirteen months before, she began to have fits. The attacks began by tremors in the hands and arms, then she had a spectral vision—the "intellectual aura," or, as he preferred to call it, the "dreamy state"—a little black woman, who was always cooking. She also complained of a horrible smell and feeling of suffocation, and then stood with her eyes fixed for a short time, but did not lose consciousness, though she passed urine during the attacks. On examination she was found to have weakness of the right arm and leg, which passed into paralysis subsequently, and shortly before death she had double optic neuritis. She never complained of much headache, and had no defect of sight or other important symptoms. He insisted on the fact that there was no loss of smell, but only a disordered subjective sensation, and said that crude sensations were usually referred to smell or taste, or a peculiar feeling in the epigastrium. This, he said, was the only case of this variety of epilepsy, which had been proved at the post-mortem to be associated with actual lesion in the tempero-sphenoidal region. Dr. Beevor detailed the post-mortem appearances. He said the whole of the anterior end of

the tempero-sphenoidal lobe was occupied by a tumour (proved microscopically to be a small round-celled sarcoma), enveloping the amygdaloid body, but not involving the grey cortex of the hippocampal convolution. The nucleus dentalus and fibres of the internal capsule were much compressed. He pointed out that, had the centre been wholly destroyed, subjective phenomena could not have been perceived, and recalled the fact that Dr. Ferrier had localized the function of smell in the hippocampal lobule and neighbourhood, and that the anterior end of the tempero-sphenoidal region was highly developed in animals with a keen sense of smell.

Tumour of Pons.—Dr. J. M. Finny exhibited to the Academy of Medicine in Ireland a fibro-gliomatous tumour, the size of a large marble, which occupied a considerable portion of the pons, principally its left half and posterior part. It was removed from a patient, aged thirty-five, free from tubercular or syphilitic history, who came under his notice in August, 1888, after a fortnight's illness, and died six weeks later in coma, with most of the symptoms of bulbar paralysis. The following were the first marked symptoms: (1,) Incomplete paralysis of motion and sensation of right arm and leg, with loss of muscular sense; (2,) Left facial paralysis, involving the frontal and ocular branches; (3,) Conjugate deviation of the eyes to the right; (4,) Paralysis of left sixth nerve, and associated paralysis of right internal rectus; (5,) Slight optic neuritis of left eye; (6,) Paralysis of expulsive power of bladder and rectum. Typical bulbar paralysis, involving the tongue, lips, and pharynx; complete anæsthesia of side of face, lips, and tongue, supplied by the right fifth nerve; increasing muscular weakness; inability to stand or sit without falling backwards; paralysis of respiration, and filling of bronchi with mucus, and intense double optic neuritis, were added. The case terminated with convulsions and coma. Dr. Finny pointed out the diagnostic symptoms of chronic disease of the pons, which excluded disease of the motor areas and internal capsule. Among the most remarkable and pathognomonic were: (*a*,) Facial paralysis and lagophthalmos on left side, with right hemiplegia of arm and leg, these localizing the lesion to the lower part of the pons; (*b*,) Paralysis of left sixth nerve on same side as seventh—this located the disease to that part of the pons where the fibres of the seventh wind round the nucleus of the sixth nerve; (*c*,) Conjugate deviation of the eyes to the right. The right eye could be brought—and for a time the left also—as far as the middle line by volition, but on convergence passed well to the left. As Gowers showed, this pointed to the olivary body or its neighbourhood as the site of the disease, but later on, when the sixth nucleus was totally destroyed, the left eye was

permanently turned inwards, while the right had the same limited area of motion.

Pean reported a case to the Académie de Médicine, of epilepsy occurring in a young man, æt. twenty-eight, who for many years had been suffering. For five years the frequency and severity of the fits were controlled by bromides. The fit commenced by a painful spasm of the right great toe, then spread to the right leg—first tonic, then clonic—then spreading to the right arm and right side of the face. Loss of consciousness did not always occur, but when existing it occurred only at a late stage of the fit. A tumour was removed from the neighbourhood of the convolution around the upper extremity of the fissure of Rolando, and the patient was perfectly cured.

Brain Tumour with Thinning of Skull.—Dr. Bell exhibited at the Academy of Medicine in Ireland an angeio-sarcoma, the size of a turkey's egg, which had occupied the right occipital and part of the tempero-sphenoidal lobes. The symptoms during life were pain in the head, vomiting, double optic neuritis, and a pulsating venous tumour on the vertex. The diagnosis was one of perforating angeioma, and both external carotids were tied above the facial, to diminish the blood supply through the middle meningeal and temporal arteries, with the result that all symptoms were relieved for a month, when they re-appeared with increased severity, and proved fatal. The necropsy showed that the venous tumour was formed by a number of veins passing through the skull, which conveyed blood from the great longitudinal sinus, the flow of blood into the right lateral sinus being prevented by the pressure of the tumour on the torcular Herophili. The calvarium was nowhere more than $\frac{1}{16}$ of an inch in thickness, and was perforated in several places.

Dr. Kirmisson related a case of perforating tumour to the Societé de Chirurgie. Dr. Pousson, in discussing these cases, said he had collected fifty-two similar ones; forty-nine had been subjected to operation, twenty-six being successful and twenty-three fatal. Excision was performed thirty times, twenty-two recovering and eight proving fatal. Excision is without doubt the only treatment that should be resorted to.

In some cases where all the symptoms of a cerebral tumour exist no tumour has been found on opening the skull at the suspected place, but from the reported cases it would appear the operation has given relief. (*Vide* "Epilepsy.")

Fischer, of Breslau, related to the German Congress a case of a man aged thirty-seven years, who had all the symptoms of a tumour in the left motor region—pain, Jacksonian epilepsy, paresis of lower limb—but on

trephining over the left ascending frontal convolution no tumour could be found. Notable amelioration however followed the operation, but some months after all the symptoms returned, and trephining was resorted to a second time in the same location, and an infiltrating neoplasm found and removed, and the patient cured. In a few months, however, the disease returned in the same place, proving fatal.

A somewhat similar case is related by Höftman, Königsburg. In this there were all the symptoms of a cerebral tumour, commencing with headache and ending with convulsions and hemiplegia. Trephining discovered no tumour, but all the symptoms disappeared. Höftman thinks trephining relieves the intra-cranial tension, and acts in a somewhat similar manner to iridectomy in glaucoma.

Tubercle of Brain.—Dr. Sainsbury read notes of a case of meningeal tuberculosis occurring in a woman, æt. forty-eight. When presenting herself for examination it was found there existed weakness of the right leg and doubtful weakness of the right arm. The superficial reflexes on both sides of the body were absent, but the deep reflexes on the right leg were exaggerated, ankle clonus being present. The patient died ten days later in a comatose condition, and at the necropsy miliary tubercle was found at the upper extremity of the ascending parietal and frontal convolutions, as well as a small separate focus of caseated tubercle about the middle of the ascending parietal. The case is interesting, as showing that tubercle may be localized, and cause the symptoms of a cerebral tumour ; and the value of the two symptoms—absence of superficial reflexes and the exaggeration of the deep reflexes—as indication of organic brain disease.

Cerebral Gumma.—Mr. J. K. Barton, Dublin, contributes a case of syphilitic necrosis of frontal bone, in which there was all the symptoms of cerebral pressure. After removal of the necrosed bone by trephining, a gumma was discovered beneath the dura mater and removed, giving immediate relief, but death resulted in about a month from hernia cerebri and general failure.

Whilst the *cerebellum* is less accessible than the cerebrum yet it is not beyond reach, and probably in the future it will be less exempt from surgical interference. There are not the same topographical divisions and boundaries, nor can it be said that the localization of the disease is an altogether easy matter. It would also appear that in most of the reported cases the disease was of a tubercular character.

Dr. Preston relates a case of tumour of *middle lobe of cerebellum* occurring in a man, æt. thirty-six. The first symptom was occipital headache, followed by mental hebetude, then sight and hearing failed. When he presented himself for examination he was nearly blind and deaf. The

pupils were contracted and insensible to light or other stimuli, and there was slight nystagmus. No paralysis was present, and sensation was unimpaired. The muscular strength was good, but the muscular sense was abolished. Reflexes were present, but diminished in force. Patient could not stand or walk alone, and on attempting to do either, would fall backwards. Complained of pain in occipital region and neck. No ophthalmic examination was made.

The man died suddenly, and at the necropsy the tumour was found as above stated. The microscopic character is not given.

Dr. Booth reports a case of supposed tubucular disease of cerebellum. At first there was no optic neuritis, subsequently this supervened, followed by blindness and optic atrophy. The temperature was raised from the onset of the symptoms. No operation was attempted in either case.

R. Park has collected three cases of cerebellar disease; one was a spindle-celled sarcoma of left lobe, and two were tubercular disease. The two latter were submitted to operation and died in a few hours; the former was not diagnosed before death.

REFERENCES.—"Jour. of Neur. and Ment. Dis.," April, 1889; Booth, *Ibid.*, March, 1889; "New York Med. Times," Nov. 3, 1889; "New York Med. Jour.," Nov. 11, 1888; "Brit. Med. Jour.," Feb. 23, 1889, April 27, 1889, and June 29, 1889; "Rev. de Chir.," pp. 349, 786, 860, and 860; "Lancet," Feb. 1889, p. 379; "Annals of Surgery," vol. ix., p. 32.

BRAIN SOFTENING.

Synopsis.—(Vol. 1889, p. 13.) **Amylene Hydrate,** iijss grammes, as hypnotic, especially if cramps cause insomnia.

BREAST (Diseases of). *John W. Taylor, F.R.C.S.*

Inflammation of the Breast and Abscess.—In nearly all cases of this disease the most useful and effectual means of local treatment is by wool padding and the simple broad bandage. Both breasts are thoroughly enveloped with a double layer of absorbent wool. A simple wide bandage, not too long (like an abdominal binder), is then placed round the thorax, enclosing both breasts. It is drawn as tightly as possible above the wool padding and fixed by safety-pins. If there be no discharge and the bandage is well applied, it may often remain untouched for several days. If an abscess is discharging, the binder will need re-application once or twice daily. This method is far simpler, cleaner, less painful and more efficient than all the old methods of compression by strapping. It may moreover be used with the best results during all the acute stages of the disease.

Some cases of mammary abscess have been recently traced to

gonorrhœal infection. When an infant at the breast has gonorrhœal ophthalmia, the possibility of this should be remembered. If suspected, the pus may be examined for gonococci. (See "Gonorrhœa in Women.")

For enlargement of the breasts with excess of adipose tissue, the following ointment has been advised :—

℞ Iodoform 1 part | Vaseline 15 parts
Ol. Menth. Pip. q.s.

REFERENCE—"Kisch. Deutsch. Med. Zeit.," p. 32, 1888.

How may the locality of Breast Tumours be best described?

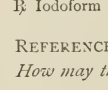


Fig. 21.

Each breast may be divided into five regions, as in the accompanying diagram : (1,) An upper external ; (2,) an upper internal ; (3,) a lower external; (4,) a lower internal ; and (5,) central or "nipple" region. This is the method used by Dr. Gross, is becoming generally adopted, and is exceedingly simple and practical.

How may a simple Mammary Tumour be removed without leaving a Visible Scar?

Tharras's operation is often unknown or forgotten. The method consists in making the incision on the fold or groove below the breast, turning up the gland from the muscle and removing the tumour from its lower surface.

REFERENCE. Hayward, "Brit. Med. Jour.," Feb. 23, 1889.

Is Paget's Disease of the Nipple a Parasitic Affection?

M. Darice states, that if epidermic scales from the diseased surface be teased out in water or iodised solution, rounded bodies invested with a repactile membrane may be seen in the midst of, or within, the epithelial cells. These are of the nature of psorospermia or coccidia, and have been previously figured by Buthin in 1876, being then regarded as evidence of endogenesis.

The conclusion is, that not only Paget's disease, but the epithelioma which is its sequel, may be due to the presence of this parasite.

Breast (Cancer of).

Associated with Myoma of the Uterus.—In two hundred and forty-three cases twenty-seven had fibroid tumours of the uterus.

Where is Secondary Cancer most likely to occur?

In 735 necropsies after cancer of the breast,
241 had cancer of the *liver*,
70 „ „ „ lungs,
30 „ „ „ kidneys or supra-renal,
17 „ „ „ spleen.

REFERENCE.—Paget, "Lancet," March 23, 1889.

(For other statistics of mammary cancer see "Brit. Med. Jour.," June 1, 1889.)

Breast (Tubercle of).

A case of tubercular abscess of the breast was detailed and discussed at the meeting of the Pathological Society of London on May 21, 1889. It formed a chronic tumour of six years' standing in the upper external quarter of the left breast. The skin was attacked and faintly discoloured; the axillary glands were enlarged. These were connected with the breast tumour by a hard and slightly nodular cord, extending along the lower border of the pectoralis major. The bibliography of the subject is printed in the "Lancet" for June 8, 1889.

BRIGHT'S DISEASE. *Robert Saundby, M.D.*

The Pathology of Nephritis.—It is well known that a large number of poisonous substances are capable when introduced into the circulation of setting up nephritis. To these must now be added all the products of disassimilation. E. Gaucher has shown that leucin, tyrosin, kreatin, kreatinin, xanthin and hypoxanthin set up nephritis when injected in solution into the circulation of guinea-pigs. ("Rev. de Med." 1888, p. 885).

It is probable that it is by leading to the formation of an excess of some of these bodies that almost all acute febrile diseases are capable of setting up nephritis.

Classification of Acute Bright's Disease.—Dr. Francis Delafield, of New York, recognizes three forms of acute Bright's disease: (1,) Acute exudative nephritis, or simple acute inflammation of the kidney, which may or may not end in necrosis of the renal epithelium; (2,) Acute changes in the kidney, characterized by necrosis of the epithelial cells of the tubules; this is the form produced by arsenic, mercury and other poisons; (3,) Acute diffuse nephritis in which, in addition to the lesions of exudative nephritis, we have (*a*,) a growth of connective tissue in the stroma, and (*b*,) a growth of the capsule cells of the malpighian bodies.

The first of these forms is very common, occurring in most acute diseases, often without giving rise to any naked eye changes in the kidney. It is only when it has passed on to the second or third form that it is recognized clinically, for the most part. ("Studies in Pathological Anatomy," New York, 1888.)

Angina Pectoris in Contracting Kidney.—Dr. Samuel C. Chew, of Baltimore, has drawn attention to the coincidence of these conditions, and to the probability that both are due to some nervous disturbance

which affects the heart and arteries. He does not think that the angina can be due to changes in the coronary arteries. ("New York Med. Jour.," Dec. 8th, 1888.)

Alpine Winter Climates in Renal Disease.—Sir Andrew Clark strongly urges the dangers to which those phthisical patients are exposed in the various Alpine winter health resorts, whose malady is complicated by renal disease. He also says that patients who develop albuminuria when at these stations almost always do unfavourably. ("Lancet," Jan. 5th, 1889.)

This warning applies, if possible, with greater force to cases in which Bright's disease is the principal disease. These high altitudes are suitable for renal disease *in summer only*.

The effect of Rapid Changes of Altitude in advanced Contracting Kidney.—Dr. George Chismore, of San Francisco, has given a most interesting account of the journey of a Californian millionaire from San Francisco to New York, over the Central and Union Pacific Railroads, which attain an altitude of over 8,000 feet, and for about 48 hours of the journey are on ground not less than 4,000 feet above the sea. The patient who travelled in a palace car, attended by his doctor, and surrounded by every comfort and luxury that wealth could devise, became very ill as the track rose; his feet began to swell, his pulse ran up, respiration became shallow and irregular, and he complained of headache, thirst and "oppression." He developed pericarditis. On again reaching ordinary altitudes he was a little better, but died four days after reaching New York. ("New York Med. Jour.," Dec. 8th, 1888).

This case is interesting, especially to Americans who have to make these journeys. It must be remembered that the man was very ill indeed before he started, and that the change of elevation was very rapid. It does not at all follow that mountain residence is not suitable for cases of contracting kidney; on the contrary, we believe that where cold can be avoided a high elevation is very beneficial to these cases.

TREATMENT.—*Hæmaturia.*—Dr. H. D. Didama recommends the use of **Alum** in obstinate hæmaturia, in doses of 20 grains, three times a day, dissolved in a goblet of water. He lays stress on the importance of largely *diluting* the drug. ("Jour. Amer. Med. Assoc.") It may be stated that hæmostatics, as a rule, have little or no effect on hæmaturia.

Arterial Tension.—Dr. Leech, of Manchester, has suggested the use of a 3 per cent. solution of **Nitrite of Ethyl** in absolute alcohol, with 5 per cent. of **Glycerine** added to it. The dose is half a drachm. ("Med. Chron.," Dec. 1888.)

Cardiac Distress and Headache.—Goodhart has found that **Paraldehyde** is very useful in relieving the cardiac distress and headache of Bright's disease, given in half-drachm doses. ("Brit. Med. Jour.," Jan. 19th, 1889.)

The difficulty about paraldehyde is its disagreeable taste. It must be given well diluted with water, but its taste can hardly be covered by anything. Its action is strengthening to the heart, while it slows respiration and allays the irritability of the reflex centres.

Morphia in Uræmia.—Dr. Stephen Mackenzie urges the adoption of the treatment of chronic uræmic symptoms by hypodermic injections of **Morphine,** which has been long advocated by Dr. Loomis, of New York. The symptom for which it was used was urgent dyspnœa. Dr. William Carter, of Liverpool, writing on the same subject, gives as the indication for the use of morphine, uræmia *with dilated pupils.* ("Brit. Med. Jour.," April 13th and 27th, 1889.)

Dropsy.—Mr. J. G. Marshall has published a case which shows the value of **Pilocarpine** injections in reducing the anasarca of acute or subacute Bright's disease. He employed the drug in doses of gr. ¼, subsequently reduced, as these caused severe vomiting, to gr. ⅓, twice a day, afterwards daily, and finally on alternate days. At the end of a fortnight all œdema had disappeared. ("Lancet," Dec. 22, 1888.)

Diet.—Dr. Beverley Robinson thinks that the dietetic treatment varies for the different forms of Bright's disease, which he thus classifies: (1,) Chronic parenchymatous nephritis; (2,) Lardaceous disease of the kidney; (3,) Interstitial nephritis. For the first he recommends an exclusive milk diet, or broths, beef tea, light and farinaceous food, with water, imperial or soda water. The milk may be mixed with Vichy water or given as peptonised milk or koumiss. The milk is better to be given unskimmed, and may be taken warm or cold.

In the second form, lardaceous disease, abundant nourishing food should be given so long as any suppurative cause is present; afterwards it should not differ materially from that recommended for parenchymatous nephritis.

In the third form, interstitial nephritis, the diet should consist of milk, or milk and Vichy water, without alcohol, or only in the form of light wines, and the author says that in uræmia gin or whiskey must be given promptly. ("New York Med. Rec.," Jan. 5th, 1889.)

This advice is not in accordance with the best results of English practice. We may sum this up briefly in the following way: In acute Bright's disease, or in acute intercurrent attacks during the course of chronic Bright's disease, or whenever any urgent symptoms are present in chronic Bright's disease of any form, simple milk diet

with bread or farinaceous food, and alkaline drinks should be adhered to. In chronic Bright's disease, where there are no urgent symptoms, and the general condition is being maintained, greater latitude is permissible, but alcoholic drinks of all kinds, and butcher's meat or food made from butcher's meat, such as beef tea, must be absolutely forbidden. The diet should consist of fish, fowl, game, fruit, vegetables, bread, farinaceous puddings, milk, butter and cream, with some alkaline mineral water, made pleasant with lemon juice, or perhaps a dash of claret.

Synopsis.—(Vol. 1888, p. 153.) **Ipecacuanha** for pulmonary and gastric catarrhs attending, but **Bismuth** may be required for gastric catarrh, *e. g.* ℞ Bismuth Carb., gr. x, Pulv. Rhei, gr. iij, Sodæ Bicarb., gr. x, Pulv. Cinnamomi Co. gr. x, Ft. Pulv. mitte xij, Sig. j half-an-hour before food in milk; **Ferr. Perchlor.**, ♏xv sec. hor., and starch powder locally, if erysipelas supervene; **Hamamelis** locally, or **Ergotin**, ♏iij to v subcutaneously, for hæmorrhages; **Caffeine**, gr. j to ij in pill, or **Nitro-Glycerine**, 1% solution, ♏j to ij, for headache and giddiness; **Purgative** and **Hot-Air Bath**, or **Pilocarpine**, gr. ½ subcutaneously, for blindness and deafness; **Bleeding** to 12 or 16 ounces for convulsions, if persistent; **Bleeding**, or **Hot-Air Bath**, or **Pilocarpine**, for hemiplegia and coma, and also for asthma. **Nitro-Glycerine**, **Purging**, or **Hot-Air Bath** for palpitation; **Iron** and **Strychnine**, with (?) **Digitalis**, in heart failure; **Tinc. Ferr. Perchlor.**, as tonic; **Nitro-Glycerine**, 1% solution, ♏j, to keep down arterial tension.

(Vol. 1889, p. 182.) ℞ Tinct. Cannabis Indicæ, ♏xv to xx; **Chloral Hydrat.**, grs. x; **Pot. Bromid.**, ʒss, allays distress and produces sleep. For uræmia **Sod. Benzoat.**, given hourly in doses amounting to ʒj or ʒij daily in solution, wafers, capsules, or enemata. Dr. Andrew recommends **Hot-Air Baths**, **Pilocarpine**, dry cupping over loins and internally, ʒss doses **Liq. Ammon. Acet.**, with **Vin. Antimon.**, ♏xv to xx, if pulse be unusually firm; to check fits **Chloral Hydrate**, grs. v, hourly or half-hourly, a single dose of x grs. may be given at first; **Tinct. Nucis. Vom.** instead of **Vin. Antimon.**, if fits persist; to aid heart **Digitalis** is preferable to alcohol, and may be combined with **Sod. Benzoat.** ℞ Sod. Benzoat, gr. x, Tinct. Digital, ♏x, Aq. ad ʒj. M. Sig. every six hours. **Pulque** or **Agave Wine**, ʒi to ʒjss dose (p. 62).

BROMIDROSIS.

W. Allan Jamieson, M.D.

The simplest method of treatment consists in washing the feet carefully with hot water and some **Bland Neutral Soap**, and after drying dusting carefully with a powder consisting of:—

℞ Salicylic Acid	3·0	Powdered Starch	10·0
Talc	87·0		

The stockings should be frequently changed, and patent leather boots or india-rubber over-shoes avoided. Recently **Chromic Acid** has been used in the Prussian army. A solution varying from five to ten per cent. is applied to the soles of the feet every three or four weeks. If there is any broken surface the solution must not exceed five per cent. till this heals. The solution is applied with a brush ("Med. Press," 12th June, 1889).

Synopsis (Vol. 1889, p. 184.) **Tinct. Belladonn.**, or **Atropine**, hypodermically, gr. $\frac{1}{150}$ increased to gr. $\frac{1}{60}$; Ext. Ergot **Liq.**, ℥ss t.d., or **Sulph. Præcip**, a teaspoonful in milk twice daily, and combined with astringents if purging ensue (Crocker). *Locally*, **Lin. Belladonn.**; Faradization (Hebra), **Ung. Litharg.**, changed twice daily, and used for a fortnight; strapping firmly with Lead or Soap plaster (Duffin); dusting stockings and boots with finely powdered **Boracic Acid** (Thin); washing in **Boracic** solution daily; sponging with 1% solution of **Quinine** in **Alcohol** (Fox); **Naphthol, Boracic**, and **Salicylic Acids**, grs. x to xxx, Aq. ℥j; **Lanolin** or **Alcohol** (Shoemaker); **Boroglyceride**, in 50% solution, or **Oxalic Acid**, grs. x to xx, Aq. ℥i.

BRONCHIECTASIS.

Synopsis.—(Vol. 1888, p. 136.) Small inhalations of **Chloroform** or of **Eucalyptus** or of **Essent. Menth. Pip.** in hot water to relieve cough; **Iodides** in syphilitic cases; **Cod-Liver Oil** or **Iron, Mineral Acids** and **Bark**, with **Antiseptics**, and the latter also by inhalation, if sputa is fœtid, with great drain on constitution; **Pure Terebene**, ♏v to x, with **Iodol**, gr. j to iij, dissolved in Cod-Liver Oil and given thrice daily; **Soda Sulpho-Carbolate**, grs. v to x, or **Creasote, Carbolic Acid**, or **Tar**, in pills, may be used; inhalation from respirators 30 minutes or longer, thrice daily, *e. g.*, ℞ Tr. Iodi Ethereatis, Ac. Carbol. āā ℥ij, Creasoti, ℥j, Sp. Vin. Rect. ad ℥j, Sig. The Inhalation; **Chloroform** or **Sulphuric Ether** may be added if cough is urgent.

BRONCHITIS. *Henry Dwight Chapin, M.D., New York.*

Dr. Descroizilles ("Jour. de Med.," Dec. 23rd, 1888,) has used **Terpene** in the form of elixir, wine, pastils, or paste, in doses of 10 to 60 centigrammes daily, for children from six to ten years of age. It may be used with advantage in place of turpentine. The taste of terpene is much less disagreeable than that of turpentine.

Plastic Bronchitis. *Frank J. Wethered, M.D.*

Dr. Alex. W. Stirling records a case of plastic bronchitis, in the course of which he makes the following remarks: The patient was a dock labourer, aged thirty. This disease is one in connection with which considerable difference of opinion exists, in regard to both age and sex; but it is probably most correct to say that it is about equally common, or rather uncommon, in both sexes, and that it generally occurs between the ages of ten and forty. Plastic bronchitis makes its appearance in healthy individuals apparently without any idiosyncrasy. Certain German authors state that the predisposing and probably essential condition is a certain dyscrasia, constitutional or acquired. It seems to have no special tendency to follow ordinary bronchitis, pneumonia, or diphtheria. The peculiar casts expectorated form the essential feature of the disease. (They are best demonstrated by being spread out in a dish of water, and are then seen to consist of tree-like moulds of the bronchial tree, most commonly of the large

branches, although extending to the most minute ramifications. By their method of branching and the length of the internodes the localization of their place of origin may often be determined. Small nodules are often seen at the main points of bifurcation. By the similarity of casts ejected at various times they may be presumed to come from the same portion of the respiratory tract.—F. J. W.)

The microscope shows them to consist of a fibrillar material, in the meshes of which are numerous leucocytes, fat globules, some hæmocytes, and epithelial cells. Charcot Leyden crystals are often found in great numbers and perfection. The spirals of Curschmann referred to by Dr. Stirling present an entirely different appearance, consisting of a central, highly refracting, central thread, round which is entwined leashes of mucous and cells in a peculiarly spiral manner. They are found chiefly in asthma, but also in any case in which there is a catarrh of the smaller bronchi.

As regards the treatment of plastic bronchitis, Dr. Stirling and Dr. Bruce recommend the following prescription :—

℞ Potassii Iodidi	gr. iij.	Vini Antimonalis	♏ v
Potassii Bicarbonatis	gr. xv.	Aquam ad	℥j
Ammonii Carbonatis	gr. iv.		

Sig. Two tablespoonfuls every four hours.

This had no effect in preventing the formation of the false membrane, but was beneficial in enabling the patient to cough it up more easily. The dose of **Carbonate of Ammonium** was afterwards increased, and squill and senega added. Other drugs have also been recommended, such as **Mercurials**, inhalation of alkalics, especially **Aqua Calcis**: emulsion of **Turpentine** or **Copaiba**, antiseptics, **Arsenic**, etc. Removal to a warm, soothing climate, would probably be more useful than drugs.

Oxygen in the Capillary Bronchitis of Children.—Dr. Sinainski gives some notes of a case of capillary bronchitis in a child a year and a half old, which seemed likely to prove fatal, where **Oxygen** exerted a rapid and beneficial effect, resulting in complete recovery. He thinks that in apparently hopeless cases, where there are signs that the blood is not sufficiently oxygenated, the inhalation of oxygen presents us with a means of obviating the danger arising from that source, and in that way of perhaps saving the patient's life.

REFERENCES.—Stirling, "Practitioner," June, 1889; Sinainski, "New York Med. Jour.," Nov. 3, 1888.

Synopsis.—(Vol. 1888, p. 161.) **Ol. Morrh.**; **The Hypophosphites**; **Strychnine**; **Arsenic and Iron. Digitalis**, if right heart is overstrained; **Bark**; astringent preparations of **Iron**; **Chloride of Ammonia**, and the **Balsams**,

together with inhalations of **Creasote, Tar,** or **Carbolic Acid,** if secretion from bronchial tubes is excessive, and **Digitalis** with **Iron** and **Strychnine** is useful in this condition. **Stimulating Liniments,** specially the turpentine ones, relieve soreness and pain. **Alkalies** and **Iodide of Potassium,** if sputum is viscid and expectoration difficult; **Arsenic; Iodide of Potassium; Stramonium** and **Belladonna** are effective if cough comes on in paroxysms, and if there is much dyspnœa. **Morphia-Codeia** and **Pot. Bromide** in constant irritable cough; **Terebene,** ♏v every 4 hours, relieves dyspnœa and cough; **Sandal-Wood Oil,** ♏v in capsule 3 to 5 times daily, relieves fœtor and reduces sputa. **Hydrate of Terpina,** gr. ij to v every 2, 3, or 4 hours, *e. g.*, ℞ Terpina Hydrat. gr. xxiv, Liq. Lactucarii ʒj, Glycerine, q. s. ft. sol. Sig. ʒj; **Liquid Tar,** 1 drop on sugar or in pill, thrice daily; **Carbonic Acid Gas** as inhalation (p. 31); **Eulyptol, Salicylic Acid** vj parts, **Carbolic Acid** j part, **Essence of Eucalyptus** j part (p. 50); **Eucalyptus Honey** (p. 49); **Myrtol,** ij globules, each containing xv centigrammes, thrice daily (p. 79); **Oxalic Acid,** ℞ Ac. Oxal. gr. xxxj, Syr. Zingib. ʒij, Aq. ʒvj, M. Sig. ʒj every hour in bronchitic dyspnœa (p. 81); **Pulsatilla,** Anemonin the active principle (?) (p. 84); **Quillaia Saponaria,** gr. xxx to lxxxviij, in sweetened water, soothes cough and promotes expectoration (p. 86).

(Vol. 1889, p. 185.) ℞ Potass. Citrat., ʒj; Succi Limonis, ʒjss; Syr. Ipecac. (U.S.P.), ʒss; Tinct. Opii. Camph. ʒiij; Syrupi, q.s., ad ʒiij, Sig. ʒij, sec. hor. in early stages. **Cerium Oxalas,** in chronic or acute cases, grs. v as initial dose, increased to gr. x frequently, given dry on empty stomach. **Terpina Hydrate** in chronic bronchitis of the aged; also **Menthol** inhaled; **Pix Liquida Liquor,** ♏vi to x; **Syr. Picis. Liq.** (U.S.P.), ʒij to iv, 3tis hor. or oftener. This may be flavoured with **Syr. Pruni Virginiæ,** and addition of **Apomorphine** renders it most efficacious. **Hydriodic Acid Syrup,** increasing the dose up to ʒij t.d. in chronic bronchitis, even when **Potassium Iodid.** is not tolerated (p. 45). **Calcium Sulphide,** gr. $\frac{1}{10}$ (p. 27).

BRONCHO-PNEUMONIA. *Henry Dwight Chapin, M.D., New York.*

Dr. Angel Money ("Lancet," June 2, 1888,) advises the **Ice-bag** irrespective of the cause of broncho-pneumonia. The smaller the child, the more marked are its effects. Instead of ice-bags, Leiter's tubes may be used. In severe cases, where a rapid effect is desired, two ice-bags have been placed on the head and one over the chief consolidation in the lungs. The chief merits of this treatment consist in the maintenance of the strength, not only of the heart, but also of the respiratory centres and of the nervous and muscular systems.

CALCULI (Renal and Vesical). (See also "Bladder" and "Kidney Disease.")

Synopsis.—(Vol. 1889, p. 61.) **Pichi Fl. Ext.,** ♏xv to ʒj t.d. Probably more antilithic than solvent, contra-indicated in albuminuria.

CANCER AND MALIGNANT NEOPLASMS. *W. H. Elam, F.R.C.S.*

It is my duty to give only a general survey of the work of the year; this disease as it affects particular organs—rectum, uterus, etc., will be referred to by other contributors. The undoubted increase in the

prevalence of cancer, has deservedly directed attention to this affection. Notwithstanding that many workers have laboured both to discover the mystery of the disease and to treat it, yet nothing new has been recorded.

Etiology and Pathology.—Dr. Joseph Coats defines cancer as a malignant epithelial tumour, taking origin from epithelial cells in a very local centre, and however extensively it may become generalised, primarily it is a local growth. It occurs most frequently when the natural forces of the body appear to be diminishing, and in those organs where senile changes are perhaps most early in evidence, and which are most subject to injury.

Thiersch's well-known theory is, that the overgrowth of epithelium is rather due to a falling off in the resistance of the surrounding parts than to an excessive vital force in the epithelium. The changes in the condition of "tension" of the connective tissue of the skin and subcutaneous tissue have been investigated by Dr. Gerhardt.

He attempts to show that the "tension" diminishes with age. If it can be shown that the resistance of the subcutaneous tissue to the downward penetration of the epithelial cells diminishes under certain conditions, there is here one of the etiological factors in the pathogenesis of cancer. Doubtless the changes in the underlying connective tissue diminish with age, whilst there appears to be an increase in the activity of the epithelial structures; the layers of epithelial cells of the skin are deeper, and the hairs on the body become more numerous and thicker—this does not apply to the head, in which location epithelioma is almost unknown as a primary growth, and in animals subject to cancer the disease hardly ever affects the part of the skin covered with hairs. Also the glands of the skin become more active and relatively increased in number. How much this state of the cells influences the origin and development of the neoplasm, must, however, be left for future investigation.

Attempts have been again and again made to inoculate or ingraft cancers and sarcomata, but hitherto without much result. Hanan, however, transplanted into the scrotums of old rats, small fragments of an epithelioma, with secondary glandular affection, taken from an old rat; one died seven weeks after with a generalised cancer of the peritoneum; another one had cancer of the epididymus, when it was killed eight weeks after the inoculation. A fragment from this latter was inoculated into a third rat, and at the end of three months, carcinoma was found in the scrotum and generalised in the peritoneum. In all these cases the exact character of the disease was verified by careful histological examination.

Wehr has succeeded with dogs in inoculating cancer. The cancer was taken from the prepuce of a dog; from this, fragments were taken and deeply inserted into the skin of other dogs. He made twenty-six experiments. In a certain number of cases the neoplasm was absorbed whilst in others the ingrafted mass increased in size and generalised, ultimately causing death.

Several endeavours have been made to prove the cause of cancer to be a *bacillus*. Kübasoff, after prolonged investigations, says cancer is caused by a special rod-shaped microbe. The bacilli have slightly ovoid outlines and are arranged mostly in pairs, their length amounting to one fourth the diameter of a red blood corpuscle. The bacillus can be cultivated, and when inoculated under the skin of animals, gives rise to cancerous degeneration, commencing in the nearest lymphatic glands, and then generalises, forming genuine cancerous nodules. Rabbits and cats die in about two months from the cancer cachexy after inoculation. All varieties of cancer appear to be caused by the same bacillus.

The foregoing statements must be accepted with great caution. It is most difficult to understand how one form of bacillus can give rise to all the clinical varieties of cancer and their different microscopic characters,—the columnar, spheroidal, or flat-celled growths.

Dr. Isambard Owen has prepared maps of the geographical distribution of disease for the Collective Investigation Committee of the British Medical Association. The map for the distribution of cancer fails to show that any district can be said to be the favourite one for the existence of cancer, although the river side, the sea side, flat districts, and hilly districts, have been severally believed to be particularly favourable in some manner to the prevalence of cancer.

A point proposed some time ago by Professor Rommelaere, of Brussels, and since emphasized by numerous others, consists in the observation that in malignant tumours, wherever may be their locality or morphological aspect, the amount of urea excreted in the urine gradually decreases, until, finally, it is not more than one hundred and eighty grains in twenty-four hours.

Tongue.—Krause presented to the German Congress in the spring of this year (1889) three cases of cancer of the tongue, upon whom he had operated by Langenbeck's method more than four years previously, and in which there was no return of the disease.

Schede, out of twenty-one cases of cancer of the tongue operated upon by him since 1880, had seven cases remaining well after four years, one case being well nine years after operation; in this there

was secondary disease of the glands in the neck, and these were removed three years after the primary operation.

Bergmann showed two men whose tongues had been removed for cancer, one two years, and one three years previously, and who remained well.

Kuster, out of twenty-six cases of operation for the same disease, had four who were alive and free from disease three years after operation; one six years.

Krause, in ninety-one cases of extirpation of the tongue, had two deaths. If possible, he avoids a preliminary tracheotomy. When the diseased mass can be drawn beyond the dental arch, he uses the scissors for extirpation, picking up bleeding points with pressure forceps, and sutures the two mucous surfaces. When the disease is far back, he divides the jaw laterally in order to get behind the disease. The average duration of life in the worst cases was one year.

Mr. R. Barwell, in a lecture on removal of the tongue for cancer, advocates his method of removing the diseased organ by the *écraseur*; he considers it painless, aseptic, and bloodless, and the results in his hands have been remarkably good, both as regards rapidity of recovery from the operation, and the lengthened period during which there was no recurrence of the disease.

Palate.—A very interesting case of primary cancer of the hind palate—a very rare occurrence—is related by Kronacher in the "Deut. Zeit. für Chir.," B. 29, p. 192.

Lip.—In order to diagnose cancer of the lip, Von Esmarch scrapes some of the disease away and examines under the microscope. If tubercle bacilli are found he scrapes the surface and applies the cautery. If actinomycosis fungus be found, he scrapes and applies sublimate gauze. If spindle cells are found, he suspects syphiloma. When he finds true epithelioma, he of course extirpates the diseased mass.

Dr. Tripier recommends that after removal of an epithelioma of lower lip, a bridge of mucous membrane should be dissected up and fixed by suture over the raw surface left after removal of the cancer. He gives drawings of cases he has successfully treated in this manner, and in only two cases out of forty-four, did the bridge of mucous membrane slough.

Face.—Dr. Ohren has carefully analyzed seventy-two cases of cancer of the face, excluding cancer of the lips; of these, seventeen died from local recurrence, and thirty-one were alive or died without recurrence. The average period of life after the removal of the first recurrence was two and a half years. Carcinoma of the face is much less malignant than in some other parts, and the results of operation would be much more

favourable if the disease were early extirpated. In only two of these cases could Ohren find a history of heredity. The proportion of men over women afflicted with cancer of the face is as two to one.

In some cases, at least, all the transitions from the normal epithelium to the cancer epithelium can be traced. M. Hartmann presented to the Societé Anatomique sections of a cancer of the thyroid, in which this was clearly evidenced.

Rectum.—Bergmann presented five men who had been operated upon from two to four years previously for cancer of rectum, and who showed no sign of return of the disease. In each case the sphincter had been removed, and the power to retain solid fæces remained, but not liquids.

Krause showed three similar cases; each remained well six, eight, and nine years respectively.

Stomach.—M. C. Baert, of Brussels, writing in "La Clinique" on *cancer of the stomach*, calls attention to the frequency with which œdema of the ankles is met with in this affection after it has lasted a few months,—a diagnostic aid which is by no means new, but is, he thinks, in danger of being too much overlooked at the present day. He gives a number of cases recently occurring in the various hospitals in Brussels in which œdema was present. In one of these cases the œdema came on as early as three months after the first symptoms of the affection made their appearance; in two other cases it was noticed after four months; but in most of the other instances it was delayed till the lapse of from six months to a year after the onset. In one case, where there was no evident cause to which to attribute the loss of appetite and the wasting complained of by the patient, Professor Carpenter, noticing some œdema of the ankle, diagnosed carcinoma of the stomach, and found his diagnosis confirmed by the appearance a month afterwards of all the usual signs of the affection. Several of the cases presented a marked increase in the nitrogen excreted in the urine. With regard to the deficiency or absence of hydrochloric acid in the stomach in cancer of that organ, M. Baert admits that it is usual, but agrees with Wolff and Ewald in saying that this sign is by no means peculiar to cancer, as it is found in other gastric affections.

The differential diagnosis between cancer and ulcer of the stomach is frequently obscured by the greatest difficulties. In deciding as to the presence of cancer, the diagnosis is generally determined by the advanced age of the patient, the localization of the pain in the epigastrium, the interval elapsing between the ingestion of food and vomiting, the black coloration of the hæmatemesis, the gastic dila-

tation, the presence of the tumour or induration in the region of the epigastrium, the yellowish cachexia, the production of white, painful œdema, the rapid progress of the disease. On the other hand, in gastric ulcer the patients have not usually reached middle age; there is radiation of pain to vertebral column; vomiting follows almost immediately on the ingestion of food; vomited blood is brilliant red in hue; while dilatation of the stomach, epigastric induration, and especially cachexia, may be absent; and, finally, the progress of the disease is variable, and frequently remissions occur in the course of its evolution. Unfortunately, there are, however, numerous cases in which parts of these signs are absent, or even in which both classes of symptoms may occur in the same patient.

Bone.—Several cases of myeloid sarcoma of bone were presented to the German Congress by Esmarch, Bergmann and Krause, in which the disease had been scraped away with a sharp spoon from the lower jaw, the tibia, or radius. In each case the cure appeared to be definite.

Uterus.—As already stated, it is not my duty to review the controversy as to whether a partial or a total hysterectomy should be done for carcinoma of the uterus. I will only stop to give the following statistics, as they bear upon the general question of the curability of cancer.

In the Paris Hospitals one hundred and nine total hysterectomies have been done since 1885. Thirty-two patients died as a direct result of the operation (30 per cent.). Thirty-one died from a return of the disease, and eighteen from a generalisation of the disease. Only twenty-five survived without any sign of disease, and of these two have lived three years, and three, two years; the rest have scarcely lived a year since the operation, so that it is impossible to say much for these. I may add that so far as can be ascertained, amputation of the cervix is as successful as total hysterectomy, and certainly more simple and more benign.

Breast.—Mr. Roger Williams tabulates the cases of cancer of the breast in the Middlesex Hospital for the last six years. The average duration of operation cases is 60·8 months, and non-operation cases, 44·8 months. The same writer also gives an analysis of one hundred cases of disease of the male breast.

The following analysis of one hundred and fifty cases of tumours of the breast occurring in the Heidelberg Clinic, is interesting. More than 82 per cent. were carcinomata. Only fifty-one cases occurred in private well-to-do patients. The greatest number of cases of cancer occurred between forty-one and fifty years of age. Amongst the one hundred and fifty cases, thirteen were unmarried, fifty-two nursed

their children, and twenty-four had mastitis. In six cases there was a history of traumatism. Heredity was not a marked element. Four per cent. of the patients submitted to operation, died. Of seventy-two cases which could be followed, only eighteen were living, sixteen being free from a return of the disease for periods varying from one to seven years.

Heidenhain thinks the failure to cure cancer of the breast by operation may be accounted for by theory that some cancerous focus is left, either in the skin or in the great pectoral muscle. To remedy this he counsels that a larger margin of skin should be removed, and also the great pectoral muscle. Out of eighteen cases of operation for cancer of the breast, a careful examination of the removed breast led him to expect, that, on account of the small margin of healthy tissue between the breast and great pectoral muscle, a return of the disease *in loco* was to be expected in twelve cases; and in eleven cases this anticipation was realized. The thinness and uncertain limits of the fascia over the pectoral muscle, the lymphatic vessels accompanying the blood vessels which enter the muscle, and which lymphatic vessels may contain cancer elements, the continuity of the intra-muscular fascia with the retro-mammary fascia, all and each are reasons why the muscle should be removed, especially in cases where there is the least adhesion of the cancerous breast to the muscle.

It has been known for a long time, that the occurrence of erysipelas upon an ulcer or skin disease of certain kinds, has had a most beneficial influence upon the healing process. P. Bruns has collected cases of sarcomata which have been cured by the invasion of erysipelas. Attempts at cure have been made in cases of inoperable cancer of the breast by inoculating erysipelas, but without any very decided success.

Treatment by Electrolysis.—Dr. Inglis Parsons advocates this. The *modus operandi* is as follows: "The patient is anæsthetised; the current is then passed through the tumour and all the tissues for some inches round it by means of fine insulated needles, so as not to injure the skin. A battery of seventy cells with an electromotive force of one hundred and five volts is used; the intensity of the current to commence with is ten milliampères, gradually increased to six hundred milliampères, and flashed through the growth in every direction from fifty to one hundred times according to circumstances. The pulse and respiration were carefully watched. One out of the four cases treated, a women aged sixty-three, with extensive carcinoma of the left breast, a presystolic *bruit*, and weak, intermittent pulse, was unable to stand more than two hundred and fifty milliampères, and for this reason: when the current is applied to the left breast electrical

stimulation of the heart occurs, and if this organ is healthy an increase in the strength of its contraction appears to take place after its passage; but with the patient who had cardiac disease the improvement only continued up to a certain point, and then the intermittency increased and great irregularity occurred.

"These observations made last year on the human subject corroborate exactly those made in the laboratory on mammals by Dr. John McWilliam and described in a recent paper in the "Brit. Med. Jour." He called the condition of the heart fibrillar contraction, that is to say, a widely inco-ordinated arhythmic contraction of the ventricular muscle, attended by a great and rapid fall of blood-pressure. It is only, however, in the immediate neighbourhood of the heart and when it is diseased that this takes place. When the current was passed through a secondary growth in the axilla of the same patient, it could be increased to six hundred milliampères with perfect safety.

"The effects produced by the action of the electricity consist in a cessation of growth, gradual disappearance of pain, some shrinking and hardening of the tumour and enlarged glands, followed by improved nutrition and better state of the general health. The growth as a whole does not disappear, but remains as an inert mass, composed in all probability of fibrous tissue alone. Before treating these cases, I felt almost sure that this would be the case, because I had found by a number of experiments detailed in the paper before referred to, and also from treating a large pelvic fibroma by galvano-puncture in 1887, that neither could electricity decompose the fibrous tissue of new growths (whatever it might do with cicatricial tissue), nor could the system cause its absorption after it had been rendered inert. However, it will always be open to patients to have the remains of the growth removed subsequently by the knife. The advantages claimed for this method of treatment are as follows: (1,) There is no destruction to the normal tissues of the body, and if recurrence should at any time occur, its progress can be immediately stopped, and the treatment repeated as many times as necessary. Life would by this means be prolonged indefinitely, provided that metastatic deposits had not occurred before the commencement of the treatment. So far, cases able to bear the full strength required have shown no signs of recurrence; (2,) Patients are not obliged to lie up, but are able to get about on the day following the application; (3,) The current can be passed through almost any part of the body, and thus arrest growths which could not by any possibility be otherwise treated.

At present little can be said in favour of this treatment. It is not without danger, for one case has died during the operation.

REFERENCES.—"Rev. de Chir.," p. 855; Kubasoff, "Brit. Med. Jour.," March 23, 1889; Verneuil, "Rev. de Chir.," Oct. 1889; Nepveu, "Annals of Surg.," Sept., 1889; Gibbes, "Amer. Jour. of Med. Science," Aug., 1889; Hutchinson, "Lancet," Feb. 23, 1889; "Rev. de Chir.," Oct., 1889; Krause, "Deut. Med. Woch.," Nov. 22, 1889; Barwell, "Brit. Med. Jour.," March 30, 1889; Esmarch, "Deut. Med. Woch.," Nov. 18, 1889; Ohren, "Arch. für Klin. Chir.," B. 27, H. 2; Hartmann, "Rev. de Chir.," p. 95; Tripier, "Rev. de Chir.," p. 395; "Rev. de Chir.," Jan., 1889; Williams, "Lancet," Aug. 10 and 17, 1889; "Annals of Surg.," June, 1889; Heidenhain, "Cent. fur Chir.," No. 29; Bruns, "Annals of Surgery," Aug. 1889; Inglis Parsons, "Brit. Med. Jour.," April, 1889; Baert, "Lancet," April 23, 1889; Rommelaere, "Therap. Gaz.," July 15, 1889.

Synopsis.—(Vol. 1888.) **Chian Turpentine** (p. 34); **Euphorbia**, locally, in uterine cancer (p. 50); **Galium Aparine** (p. 52); **Hydrastis**, Tinct. ♏v to ʒj, or Liq. Ext. ♏v to xxx, often useful in scirrhus tumours of glandular tissue (p. 63); **Rhus Toxicodendron**, ♏j to v, internally; as liniment, ʒj to Aq. ʒj, said to be useful applied locally to hard cancers (p. 88).

(Vol. 1889, p. 70.) **Tinct. Thuja.**, gtt. xx to lxxv per diem; said to check evolution of cancer and lessen offensive odours of ulcerative period; may palliate epithelioma of larynx.

CANCER OF THE STOMACH. (See "Stomach.")

CANCRUM ORIS. *W. Allan Jamieson, M.D.*

Dr. Yates and Mr. Kingsford relate three cases in which recovery with wonderfully little disfigurement followed the application of **Perchloride of Mercury.** The sloughs were cut away and the surface freely swabbed with a 1 in 500 solution, and dressed with lint kept constantly wet with a 1 in 1000 solution, and this continued till the surface was clean and healthy. A liberal diet of beef tea, milk, and brandy was at this same time given. ("Brit. Med. Jour.," May 4th, 1889.)

CARBUNCLE. *W. Allan Jamieson, M.D.*

Mr. McReddie has had uniformly good results from the application of **Iodoform** and **Oxide of Zinc** in equal parts, without resort to the knife. He describes the method as follows: The carbuncle, after being washed with a solution of carbolic acid 1 in 40, or of perchloride of mercury 1 in 2000, is dusted over with iodoform and zinc powder, and then covered with lint soaked in carbolised oil 1 in 40. Dressings are renewed once or twice daily. Sloughs, as they get detached, are removed with forceps, but they are not touched till quite loose. Large sloughing surfaces in most unhealthy subjects have been thus treated with satisfactory results. Incisions are never called for. The iodoform, if freely used, will reach all the diseased tissue and set up a healthy process. I have never known any toxic symptoms show

themselves Of course appropriate constitutional treatment must be carried out simultaneously with the local applications. ("Brit. Med. Jour.," Jan. 5th, 1889.)

Synopsis.—(Vol. 1889, p. 196.) Carbolised Spray; Steam Spray of Ac. Carbol, 2% solution.

CARIES (CERVICAL). *Walter Pye, F.R.C.S.*

A pattern for a poro-plastic felt support for cases of cervical caries, which differs somewhat from that described by Mr. Walsham some few years back, and which seems to be both cheap and efficient, is drawn below and described by Mr. Barwell in the "Lancet" for 15th Dec., 1888.

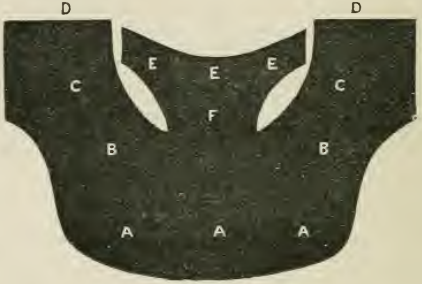


Fig. 22.

The pattern for the support must be cut out, as in *Fig.* 22, from a piece of stout brown paper. For a child of seven years, a piece about eighteen inches by twelve would do. The child lying down, the paper is placed across the neck and upper part of the chest, and cut as shown in the figure, with the central part E, fitting the jaw, the narrow part F, the neck, and the sides CC, passing over the shoulders, so that DD nearly meet vertically behind on either side of the spine. The portion A, lies across the front of the chest.

A piece of poro-plastic felt is cut out to this pattern, softened by steam, and applied to the patient in the usual manner. When moulded it will present the appearance of *Fig.* 23. The support, after moulding, will require some trimming up, may be lined at the chin, and provided with straps and eyelet holes for lacing up the back.

Mr. Barwell mentions that, in certain cases, the splint can be applied to the back, the occiput being supported instead of the jaw, the pattern being modified somewhat for the altered circumstances.

We imagine that this may often be the preferable way, but if the occiput be thus supported, it is not easy to see in what this method differs from Walsham's.

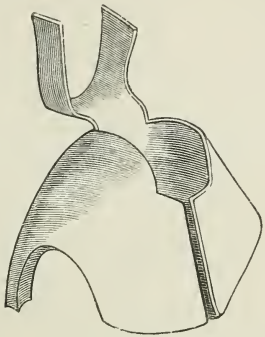


Fig. 23.

REFERENCE.—Barwell, "Lancet," Dec. 15, 1888.

CATARACT. *W. Lang, F.R.C.S.*

The question of iridectomy or no iridectomy in cataract operation has not been brought so prominently before the profession during the last year, probably because most operators now recognize that it is not possible to treat every case in the same way. Where the iris is firm and elastic, returns readily into the anterior chamber, and has no tendency to bulge into the wound, an iridectomy is not called for; but where the reverse occurs it is safer to perform an iridectomy. Again, where the eye would lead one to do without an iridectomy the unsteadiness and unruliness of the patient warns one that a prolapse will take place if an iridectomy is not performed. Mr. J. Tweedy, Mr. Higgens, and the writer have been operating in very immature cases, where the sight is not good enough to allow the patient to follow his occupation and would therefore necessitate his becoming a pauper. In such cases a peripheral section of the capsule, together with an iridectomy followed later on by needling of the capsule, gives a perfect result without any inflammatory symptoms being aroused.

Two experienced and dextrous operators, Panas and Knapp, report that their cases of entanglement of iris after the extraction of cataract without iridectomy amount respectively to 5 and 10 per cent. of

their cases. In order to diminish this risk, Saurez suggests that a suture should be used so as to close the corneal wound and so prevent the prolapse. Parent suggests that this may be done directly after the section is made and before the capsule is opened, a large loop allowing the silk to be drawn on one side out of the way of the outcoming lens, etc.

Diabetic Cataract.—Panas considers that diabetes is no bar to the successful extraction of cataract. He, however, gives his patients large doses of antipyrin before operating, with the result that the sugar almost disappears from the urine, although the odour, peculiar to the breath of these patients, remains unaltered.

The dose varies from 30 to 45 grains a day

DISLOCATION OF LENS.—Contrary to the rule followed by many operators, Despagnet and Trousseau prefer to remove the mobile lens before it has set up any inflammatory symptoms, either iridocyclitis or glaucoma. In this the present writer agrees, since in most cases where the lens is left till the eye is in danger, no operation will restore the eye to its quiet state. Trousseau makes rather a small section upwards, then an iridectomy, and removes the lens with a Taylor's vectis. He does not use a speculum, nor fixation forceps.

CEREBRAL HÆMORRHAGE. *Charles L. Dana, M.D., New York.*

Treatment of an Attack.—Dr. Andrew H. Smith, writing on the management of progressing cerebral hæmorrhage, says that **Ergot** is only of value in hæmorrhage from the arterioles or capillaries, and that it is wholly contra-indicated in cerebral hæmorrhage. If any constriction took place, it would probably be on the distal side, and would therefore increase the bleeding. Further, ergot greatly increases the vascular tension, and so would add to the force by which the blood is driven from the bleeding orifice. Purging and bleeding, which have for their object to reduce the bulk of the blood in general, and raising the head to diminish the amount within the cranium, are hurtful and not helpful to the patient, in proportion as they accomplish this object. Pressure is the only means of stopping the bleeding, and it is vastly better that this pressure should be exerted by blood within the vessels, than by blood extravasated on the brain. The correct treatment would therefore be, to place the head lower than the body, and perhaps also to administer **Nitrite of Amyl,** to increase the cerebral congestion and diminish the *vis a tergo* by lowering the vascular tension. No extended trials with this method are reported. (New York "Med. Rec." 1889.)

CEREBRO-SPINAL FEVER.

Synopsis.—(Vol. 1888, p. 167.) **Chloral** and **Bromide** for the nervous symptoms; **Opium,** or if there is vomiting, **Morphia** injections should

be substituted. The following treatment is recommended: (1,) a warm bath in certain cases of restlessness and sleeplessness, and (2,) when any tendency to collapse appears, the application of warmth to the body, in particular to the extremities, together with the liberal use of Champagne; Bleeding, Purging, Mercury, Quinine, Iodide of Potassium have been tried, without benefit.

CHALAZION. *W. Lang, F.R.C.S.*

Ray treats meibomian cysts in the following manner: He squeezes the lid between his finger and thumb, pressing out some thick fluid from the diseased duct. Into this duct he injects two drops of **Cocaine Solution** and puts a third into the conjunctival sac. Three minutes later he makes a small incision along the palpebral margin, cleans out the cavity with a sharp curette, and injects it with **Perchloride of Mercury Solution,** 1 in 2000.

CHILBLAINS.

Synopsis.—(Vol. 1889, p. 199.) **Ung. Iodi.** or **Tr. Iodi.** in early stages, **Tr. Camph. Co.** and **Tr. Belladonna,** equal parts; rubbed in night and morning; when ulcerated, **Ung. Calaminæ,** B.P., or wet **Boracic Lint** covered with oil silk (Crocker).

CHLOASMA, MELASMA, MELANODERMA.

Synopsis.—(Vol. 1889, p. 200.) **Corrosive Sublimate,** grs. $\frac{1}{2}$ to v to **Almond Emulsion,** ℥j, dabbed on several times a day; **Ac. Carbol. Pur.** applied with a brush; **Veratria,** grs. x to xx, to **Adipis,** ℥i (Crocker). **Paste of Sulphur** and **Acetic Acid** (Neumann). **Peroxide of Hydrogen** (Piffard). A layer of **Chrysarobin** dissolved in **Chloroform** with **Traumatican** brushed over as protective (Selon). ℞ Hyd. Chloridi Corrosivi, gr. x; Sp. Vin. Rect., ℥ij; Aq. Rosæ ℥ij, M. Ft. Lot. (Shoemaker).

CHLOROSIS. (See "Anæmia and Chlorosis.")

CHOLECYSTOTOMY. (See "Gall-Bladder.")

CHOLERA (INDIAN). *Alexander Crombie, M.D.*

The Comma-Bacillus.—Dr. D. D. Cunningham has contributed an important addition to our knowledge of the comma-bacillus, by a study of its life-history not in pure cultivations, or under other more or less artificial conditions, but in its natural habitat of foul water and soil, and in the presence of the numerous other organisms with which these normally swarm. He found that so long as these retained their natural condition, the commas were singularly incapable of holding their own in the struggle for existence, and tended to disappear very rapidly, various straight bacilli and micrococci being found after a time, but no commas. In fairly clean water they disappeared in four to five days, and in foul water in from five to nine days. In ordinary garden soil they were able to maintain their existence for ten to twenty-six days, but when this was mixed with healthy fæces they were absent after six to nine days. The strongly acid fermentation which accompanies

fæcal decomposition was very fatal to the commas. When, however, these media were partially sterilized by boiling, and large numbers of the schizomycites naturally present killed in this way, the comma-bacilli were able to live for twenty-five days in the case of foul water, and they were still present after forty-seven days in a mixture of earth and fæces. These experiments were conducted in Calcutta, where Koch himself recorded a striking example of the rapidity with which comma-bacilli disappear from large bodies of foul water to which they have gained access. It would thus appear that the normal conditions of soil and water in a place like Calcutta are very unfavourable to the multiplication and persistence of the comma-bacillus, so much so that Dr. Cunningham doubts whether they can persist or multiply sufficiently to give rise to any appreciable effects, granting the point of their power to produce choleraic symptoms.

Proceeding to the question of the ways in which the struggle for existence to which the comma-bacilli are exposed in any locality, under ordinary conditions, might be diminished, he classes them as follows : (*a*,) Mere diminution in the number of the conflicting organisms generally, the nutritive supply remaining unaltered ; (*b*,) Decrease or diminution of organisms specially inimical to the comma-bacillus ; (*c*,) The presence of organisms favourable to their development. There is obviously here a great field for future enquiry, for probably in this direction lies the possible explanation of much that is now obscure regarding epidemic cholera, and its regular seasonal fluctuations in the endemic area, whatever the organism is which may be advanced as the proximate agent in the causation of cholera symptoms. Meanwhile the feebleness of the comma-bacillus in the presence of the more robust schizomycites, which normally occupy the soil and water of Calcutta, forms a difficulty in the way of its acceptance as an efficient agent in determining the epidemic diffusion of cholera.

A still greater objection consists in its well-known inability to withstand the action of acids, and therefore those of the gastric juice ; so much so that according to Koch himself it is necessary to premise an alkaline dyspepsia in every case in which choleraic symptoms are produced by the comma-bacillus, when it finds access to the intestinal canal by the mouth. In every epidemic of cholera, therefore, there must be some other factor producing an antecedent or concomitant epidemic of alkaline dyspepsia, to which the comma-bacillus plays a secondary part. Hueppe has to some extent overcome this objection by his discovery that under certain conditions of defective nourishment and of exposure to certain temperatures, these bacilli give origin to peculiar small, round, highly refractive cells, which he regards as

arthrospores, and which he describes as maintaining their vitality under conditions which are fatal to normal commas; for example, drying, which kills the latter in a few hours, and the action of the normal gastric juice, so that they are capable of inducing cholera in healthy animals to whose digestive canal they have gained access, which the normal comma is not. However that may be, there is no evidence to show that normal comma-bacilli are capable of originating arthrospores in ordinary conditions of soil and water, and their rapid extinction under such circumstances is not favourable to such an assumption. One condition, that of deficient nutritive material, is one which is not likely to be found in the soil and water of places where cholera most abounds.

Loewenthal, as the result of an elaborate series of experiments, has arrived at the conclusion that the poison of cholera is a ptomaine elaborated by the comma-bacillus of Koch, from albuminoid and peptonized substances in the presence of the pancreatic juice. He found that cultivation of these bacilli in sterilized peptonized broth was inoffensive to white mice, whereas cultivation in a pancreatised broth or albuminous paste determined the production which killed them or made them intensely sick. He found that **Salol** rendered this product innocuous.

Diagnosis.—There is seldom much doubt in the diagnosis of cholera, but when a case presenting choleraic symptoms occurs in a locality where there is at the time no epidemic of the disease, some diagnostic sign is eagerly looked for. During the last European epidemic this was sought for in the cultivation of the comma-bacillus in cases of so-called cholera nostras, which do not seem to differ in any important particulars from cases of sporadic cholera in India. In the present unsettled condition of the bacteriology of cholera, such an investigation may be misleading and cannot be altogether convincing; and it is moreover beyond the reach of ordinary clinical research. Another means of diagnosis of easy application has been pointed out, consisting in an examination of the urine first passed after or during the stage of collapse. In cases where the question of diagnosis arises this secretion will not ordinarily be entirely suppressed, cases of cholera nostras not being usually fatal. The diagnostic point consists in a triple character, which is believed to be almost invariably present in true cholera, and has not been found in any other disease, namely, the presence of albumen, the absence or great diminution of chlorides, together with an excess of uroxanthin. This combination seems to be peculiar to the urine of cholera.

TREATMENT.—In India the use of **Opium** in the treatment of cholera

is confined to the premonitory diarrhœa and the very early stage of the disease. It is then given in full doses (40 to 60 minims of the tincture) with the view of putting a stop to its progress, and of preventing the full development of the symptoms, and often with success. When the algid stage is completely established opium is only harmful; and the treatment most usually adopted is the frequent administration of a "stimulant mixture" containing *Sp. Etheris*, *Sp. Ammon. Aromat.* and *Tinct. Lavand. Co.*, though *Calomel* in heroic doses still has its adherents. A combination of **Carbolic Acid, Bismuth** and **Belladonna,** has sometimes seemed to be of service. In the third stage the chief anxiety arises with delay in re-establishing the urinary secretion. A revulsion of feeling has taken place against the use of cantharides and powerful diuretics for this purpose; hot fomentations over the kidneys, diluents, and perhaps **Sp. Ether. Nitros.**, with continued stimulation, being usually resorted to. Under such a system of treatment the mortality is about 45 per cent. in natives, and from 60 to 70 per cent. in Europeans.

Surg.-Major R. C. Sanders has recently advocated the use of **Strophanthus** in the collapse of cholera, as well as in the third stage. He claims to have treated seventeen cases in this way with only two deaths; and that it causes an immediate mitigation of all the algid symptoms. Dr. Gibbons, however, pointed out that an unusually mild type of cholera was then prevalent in Calcutta, the mortality at the Medical College Hospital having been under 30 per cent.; and more extended experience does not seem to have fulfilled the expectations raised by Dr. Sanders, though the treatment may be worthy of continued trial. Surg.-Major Oswald Baker records a case in which rapid improvement and final recovery followed the injection of $\frac{1}{8}$ of a grain of **Perchloride of Mercury** deep into the gluteal region of a European patient in the second stage.

Surg.-Major W. E. Saunders in an otherwise very fatal epidemic had a death-rate of only 30 per cent. under the use of a pill containing ½ grain of **Cannabis Indica** and 1 or 2 grains of **Calomel** given at intervals of an hour, followed by **Turpentine** and **Cannabis Indica** internally, a combination which he found to excel all others in restoring the function of the kidneys. Considering the condition of the intestinal tract during the collapse of cholera, one is sceptical as to the efficacy of any drug administered in the form of pill. ("Ind. Med. Gaz.," Dec., 1887.) As a result of the experiments alluded to above Loewenthal proposes the use of **Salol** as an antidote to the cholera poison.

REFERENCES.—"Scientific Memoirs of Medical Officers of the

Army of India," Part iv., 1889; Crombie, "Ind. Annals of Med. Science," 1876; "Indian Med. Gaz.," Oct. 1887, and July, 1889.

Synopsis.—(Vol. 1889, p. 42.) **Geranium Maculatum**, grs. x to xl, given also as rectal injection.

CHOREA. *Charles L. Dana, M.D., New York.*

Treatment by Prolonged Sleep.—Dr. Bastian, sometime ago, advised the treatment of chorea by large doses of **Chloral**, sufficient to secure prolonged sleep. Dr. Gairdner, after trying this method ("Lancet," Aug. 3, 1889), concludes: (1,) That it sometimes succeeds in chorea absolutely, where other remedies fail; (2,) That it can be depended on, as a rule, in very severe cases, to initiate a treatment which may be afterwards successfully carried out otherwise; (3,) That in such cases it has an almost absolute power of suspending or controlling spasm during the persistence of its deep hypnotic action, and is therefore invaluable as a palliative (care being taken, of course, to avoid poisoning, either acute or chronic); (4,) That this or other limitations will interfere with the curative action of the remedy in some very inveterate cases; the failure of chloral hydrate in these cases, however, being common to it, with all other remedies. In the reviewer's opinion the treatment is too severe for the majority of cases met with in this country.

Two Stages of Chorea and their Treatment.—Dr. Sturges divides chorea into two stages—the first emotional and often overlooked; the second motional and obvious. If taken early during the first stage, appropriate treatment can arrest the disease. ("Lancet," Jan 12, 1889.)

Synopsis.—(Vol. 1888, p. 168.) **Tartar Emetic**, full doses, in acute chorea; **Bromides of Potassium, Sodium, and Ammonium**; **Digitalis** may be indicated, with **Iron**, in some conditions of the heart; **Salicin**, gr. iij, or **Sodæ Salicylate**, if attended with rheumatoid pains; **Ether Spray** to the spine, **Chloroform** inhalations, or **Morphia** subcutaneously; **Cypripedium**, Cyprepedin, gr. j to ij, Tinct. ♏v to xv, in chorea due to nervous exhaustion. **Lobeline**, gr. $\frac{1}{100}$ to $\frac{1}{50}$ probably would be useful (p. 74).

(Vol. 1889, p. 200.) **Antipyrin, Antifebrin**, recommended by Chapin. Dana deprecates their use, and also **Physostigmine**, **Salicylates**, and **Actæa Racemosa**.

CIRCUMCISION. *E. Hurry Fenwick, F.R.C.S.*

A most valuable and suggestive article from the pen of Dr. Davidson, of Glasgow, accentuates the importance of circumcision as a prophylaxis to masturbation and genital irritation. He emphasizes Bryant's remarks, who says, "I could quote cases in which an adherent prepuce had been the cause both of retention and incontinence of urine, and in which it has produced symptoms of irritable bladder, and every other symptom of vesical calculus, even hæmaturia, pro-

lapsus recti, and constant priapism. All, or nearly all, these cases take place in early life, and I never see a case of vesical irritation in a male child without first examining the condition of the prepuce." (Illustrative cases are given.) Mr. Langhorne relates the case of a boy of five, who had suffered from a dry cough for two years, and who also had convulsions, both of which were cured by circumcision.

Sayre has called attention to the fact that want of co-ordinating power and obscure nervous disorders in children may be entirely due to a long or adherent prepuce.

REFERENCES.—Davidson, "Pract.," May, 1889; Langhorne, "Lancet," April 27, 1889; Sayre, "Trans. of Int. Med. Congress," 1887; Farrel, "Lancet," July 21, 1888.

COCAINE POISONING.

Synopsis.—(Vol. 1888, p. 42.) **Amyl Nitrite**, as inhalation; **Caffeine**, for the after effects; Strychnine is antagonistic.

COLIC.

Synopsis.—(Vol. 1888.) **Bismuth Salicylate**, gr. xij t.d. (p. 24); **Dioscorea**, Radix Pulv. gr. ij to v, Dioscorein, gr. j, in intestinal, renal, or hepatic colic (p. 46); **Methylal** proposed as a remedy (p. 77); **Picrate of Ammonium**, gr. $\frac{1}{2}$, in malarial colic (p. 83).

COLOTOMY. *A. W. Mayo Robson, F.R.C.S.*

Colotomy may be performed in the right or left lumbar, or in the inguinal regions. It may be required: *(a,)* As a curative measure in ulceration of the rectum after other treatment has failed; in distension of the colon, with atony of its walls; in volvulus of the sigmoid flexure; and in recto-vesical or recto-vaginal fistula; *(b,)* To ward off impending death, as in obstruction of the lower part of the large bowel; *(c,)* To ameliorate symptoms, as in cancer of the rectum and prostate.

Mr. Treves has shown that the ascending colon may be opened from behind with less danger to the peritoneum than can the descending; for in 36 per cent. of the bodies he examined, he found a descending, and in only 26 per cent, an ascending meso-colon. Madelung recommends that the colon be completely cut through; the lower opening being closed and returned, the upper opening being sutured to the skin.

Mr. F. Marsh showed a patient at the Leeds Meeting of the Brit. Med. Ass., on whom he had performed Madelung's operation with a very satisfactory result. Mr. McGill related two cases where fatal results had occurred through fæcal material being imprisoned below the colotomy wound, between the stricture and the sutured colon, and setting up inflammation.

In the "Lancet" for May 4th, 1889, Mr. Harrison Cripps reported fifteen cases of lumbar and twenty-two of inguinal colotomy with but a single death in each class of cases. He believed that the inguinal method was the operation of the future and that the lumbar operation would be merely retained for a few cases of complete obstruction. The objections to the lumbar operation are: *(a,)* The depth of the bowel in a fat subject; *(b,)* The limited space in which the surgeon has to work; *(c,)* The frequent difficulty in recognizing the colon; *(d,)* The not infrequent abnormal position of the colon rendering the operation impossible; and, *(e,)* The difficulty of so bringing the bowel forward as to prevent fæces passing down towards the rectum. The inguinal operation, on the contrary, is liable to none of these objections, there being plenty of room, the bowel being easily identified, and an abnormal colon being easily found; moreover, there is no tension on the stitches and a spur is readily formed, thus preventing fæces passing into the rectum. It also possesses the great advantages of enabling the abdomen to be explored and the site of the obstruction verified before opening the bowel.

Dr. Purcell and Mr. Jessett described in the "Lancet" for Nov. 30th and Dec. 7th, 1889, what they term a "novel method of inguinal colotomy," which consists in completely dividing the bowel and returning the lower end after suture, the superior opening being carefully sutured to the edges of the abdominal wound.

References.—Bryant, "Lancet," Jan. 5, 1889 and Dec. 14, 1889; Allingham, "Brit. Med. Journ," April 27, 1889; Cripps, "Brit. Med. Journ.," April 6 and Oct. 12, 1889; Chavasse, "Lancet," Jan. 5, 1889; Marsh, "Brit. Med. Journ.," Oct. 12, 1889; Jessop, "Brit. Med. Journ.," Oct. 12, 1889.

Inguinal Colotomy. *Herbert W. Allingham, F.R.C.S.*

During the last year inguinal colotomy has been performed many times by various operators, and it would seem that to a great extent it is taking the place of the lumbar operation. Its advantages over the lumbar operation are that it is easier to perform; in the inguinal region a better spur can be obtained; the position of the artificial anus is more convenient for the patient; the recovery from the operation is more rapid. With regard to the details of operating there appears to be some divergence of opinion.

Mr. Cripps does not pay much attention to the formation of a spur by the method he employs in stitching the gut to the skin. He trusts rather to some prolapse following the operation, and so producing a sufficient spur.

Mr. Herbert Allingham deals fully with the importance of fixing the gut to the skin (at the operation), so as to purposely make a good spur; and three or four days after the operation cuts off the gut which was pulled out in order to make certain of obtaining a spur. If a spur be not intentionally made at the operation, fæces may pass below the opening in the groin into the lower part of the rectum and therefore defeat the objects of the operation. For inguinal colotomy is frequently done not only to relieve obstruction but to mitigate pain and stop the diarrhœa which is caused by fæces passing over a malignant growth, or irritating incurable cases of stricture with ulceration.

Mr. T. F. Chavasse has reported several cases of inguinal, or rather sigmoid colotomy, as he prefers to call it, and recognizes the importance of preventing fæces passing into the lower part of the rectum.

This form of colotomy, as well as the lumbar, may in certain cases be followed by a procidentia of the gut, not only from the upper part but also from the lower end of the intestine through the opening in the groin or loin.

As far as present experience goes, this procidentia is more frequent in inguinal cases. It is extremely distressing to patients, and Mr. Herbert Allingham has proposed the following supplementary operation to be used only in cases in which colotomy is performed for non-malignant strictures *(that is to say, in cases in which the patients may live a long time)*:—

After performing the first part of the operation in the usual way by making an incision two inches in length, one inch internal to the antero-superior spine of the ilium, the parietal peritoneum being stitched to the skin, pull out the gut by its lower end till no more can be made to protrude, and do the same to the upper end. The mesentery is now quite taut, and a large bunch of intestine, several inches in length, has been drawn through the opening, and is allowed to rest upon the abdomen. Then pass sutures through the mesentery, and several through the muscular and serous coats of the bowel, so as to prevent it slipping back. The mesentery being perfectly taut, no procidentia will now be possible.

From twelve hours to three days after this first operation, the time varying according to the condition of the patient and the urgency of the case, remove the bunch of outdrawn and outlying intestine. First of all apply a clamp about an inch from the wound, and screw it up tightly. The clamp should be provided with spikes, and in any case should have a firm and good grip. Unless this is seen to when the intestine is cut off, the clamp will slip off the stump, and serious

hæmorrhage will ensue. Then cut off all the portions of gut above the clamp, allowing the latter to remain firmly fixed for twelve hours—indeed, so long as any slackening of it causes bleeding. The amounts of intestine Mr. H. Allingham removed in his cases measure from four to twelve inches, and weigh from three to six ounces.

This is the only way to obviate this procidentia, for it is important to remember that this protrusion may be connected with the upper and lower ends of the gut.

REFERENCES.—Cripps, "Brit. Med. Jour.," April, 1889; Chavasse, "Lancet," Jan., 1889; Allingham, "Brit. Med. Jour.," April, 1889.

CONDYLOMATA.

Synopsis.—(Vol. 1888, p. 104.) **Thuja**, Tinct. ♏ij to x, Liq. Ext. ♏j to v, said to be one of the best remedies.

CONJUNCTIVITIS. *W. Lang, F.R.C.S.*

Stellwag considers that the following points should always be attended to in treating conjunctival affections: As long as the cornea is intact neither atropine nor leeches should be used. Inflammatory symptoms should be subdued by cold compresses, even iced, and the application of any kind of astringent. He himself prefers **Sulphate of Zinc**, 1 grain to the ounce, and then cold compresses to allay the consequent irritation. The gumming together of the lids and the consequent marginal blepharitis is to be guarded against by smearing the edges of the lids with **Vaseline** (benzoated lard is more efficacious when diluted with vaseline than pure vaseline). When the conjunctiva is very much swollen and in folds, it is necessary to use antiseptics; and he prefers a dilute solution of **Permanganate of Potash**, which must be dropped into the conjunctival sac every one, two, or three hours. In addition he cauterizes the granulations and swelling with a solution of **Nitrate of Silver**, increasing in strength from 0·5 per cent. to 1 or 2 per cent., and washes out the eye with warm water after each cauterization. If ciliary pains arise he ceases the cauterizations, and also as soon as the granulations have disappeared. Where the conjunctiva remains in a spongy condition solid **Sulphate of Copper** is very useful.

Diphtheritic Conjunctivitis.—In this disease Blanch washes the eyes with a saturated solution of **Boric Acid**, then removes as much of the false membrane as possible with forceps, rubbing the everted lids with a cloth wet with **Citric** or **Lactic Acid.** Finally, to avoid the reproduction of the false membrane, he uses antiseptic **Helenin.** He never uses moist warmth.

CONSTIPATION. *F. de Havilland Hall, M.D.*

Further experience has confirmed the favourable opinion expressed in last year's "Annual" as to the action of **Glycerine Enemata** in the treatment of constipation. One to two drachms is the dose for an adult, and ½ to one drachm for a child. The average time required after the enemata for the relief to take place is from five to ten minutes, frequently, however, the evacuation is almost immediate. In those cases, very few in number, in which burning in the rectum is complained of, the discomfort may be obviated by the mixing of a small quantity of water with the glycerine. Glycerine enemata are especially indicated in the constipation of pregnancy, where bulky enemata cause discomfort to the patient, and in infantile constipation caused by unduly prolonged feeding on milk alone.

A very convenient mode of exhibiting glycerine is in the form of suppositories. By using an especially hard castile soap, 90 per cent. of glycerine can be incorporated in suppositories, weighing 52 grains each, and these are efficient in the majority of cases. They are very hygroscopic, and therefore they should be wrapped separately in tinfoil. The suppositories are somewhat less certain than the enemata, and act rather more slowly, but are quite free from the slight burning sometimes caused by the enemata.

Dr. Grewcock states that if a piece of cotton wool about the size of a nut is well saturated with glycerine, and inserted as a suppository, in a short time a copious motion is produced ; by this plan all appliances are superfluous.

Electricity.—Dr. G. M. Hammond, of New York, speaks of the great value of electricity in the treatment of constipation. He has relieved cases of apparent fæcal obstruction in five minutes after months of ineffectual catharsis, and in one case had thus cured sciatica. He uses a mild galvanic current, the negative electrode being passed well within the sphincter. The Faradic current may be used to strengthen the muscles of the abdomen, and so aid defæcation.

Postural treatment.—Dr. E. T. Williams maintains that a faulty posture at stool and consequent inertia of the abdominal muscles are among the commonest causes of constipation. The act of defæcation may be compared to the second stage of labour. In both cases the main propelling force is the contraction of the abdominal muscles, the diaphragm being fixed, mere uterine action and intestinal peristalsis playing a subordinate *rôle* in both cases. Dr. Williams would interdict the sitting posture at stool, and substitute for it a stooping one. One of the best arrangements, for men at any rate, would be to

abolish the seat of the water-closet and have merely a stone or marble slab, with a hole at or near the level of the floor.

Persistent Constipation. *Herbert W. Allingham, F.R.C.S.*

Many able and interesting papers have been written upon the medical treatment of this complaint.

As far as is possible, before the medical treatment of bad constipation, the colon should be emptied of its poisonous contents by mechanical means.

Persistent constipation is not uncommonly occasioned by spasm with hypertrophy of the sphincters ani. This spasm with hypertrophy may not primarily exist, being at first induced by an *attack* of constipation, and then itself making the constipation persistent, and perhaps incurable.

Another important cause may be a congenital narrowness of the anal orifice, which is often too slight to be observed when the child is born.

Another cause is atony of the muscular tissue and of the bowel, combined with a loss of muscular strength. This usually occurs in the feeble and the old. Intussusception of the rectum may also lead to severe constipation; so, too, may malformations of the uterus or enlargement of the prostate. All the above may give rise to constipation, unaccompanied by any other symptoms. Thus the patient will not refer to them, and so the cause will not be looked to. Of course constipation may also follow from piles, polypus, fissure, malignant disease, or stricture of the rectum. When treating a case of persistent constipation the rectum should be thoroughly examined, and as an adjunct to all methods of treatment, the colon and rectum should be completely cleared out by copious enemata.

Should the constipation be accompanied by spasm with hypertrophy of the sphincters, the anus must be forcibly dilated under an anæsthetic. This does away with a mechanical obstruction and appears to influence the action of the larger intestine. In less severe cases, or in those who will not submit to forcible dilatation, bougies should be passed daily, increasing in size.

If the constipation results from a congenital narrowness of the anus, it can only be satisfactorily treated by forcible dilatation or division of the sphincters.

Constipation in the old and feeble, arising from atony of the rectum, may be benefited by a course of galvanism. Massage, too, has sometimes proved very serviceable.

In women, whose abdominal walls are lax and pendulous from repeated pregnancies, an abdominal belt may, by lending support to

the intestines, assist in relieving the constipation. When it is found that there is any malformation of the uterus, enlarged prostate, fissure, etc., the constipation may be cured, if possible, by the remedying of these conditions.

A good deal of late has been written about the efficacy of injecting glycerine, etc., into the rectum for constipation. I have tried them in many cases, but they are only of service so long as they act as local irritants. When the rectum has become used to them, they are no more beneficial than the ordinary injection of warm water.

REFERENCE.—"Dis. of the Rectum," Edit. v., 1888, p. 228.

Synopsis.—(Vol, 1888, p. 169.) Ferr. Sulph., gr. j or jss, with Socotrine Aloes, gr. ¼ to ½, in pill, Sig. One t.d. post cib., or Colocynth instead of Aloes in obstinate cases; Decoction of Aloes with Mistura Ferr. Co. āā ℥ss; ℞ Ext. Cascara Sagradæ Liq. ℥j, Tr. Nux Vom. ♏x; Tinct. Belladonna ♏v; M. Ft. Haust. Sig. every night and morning; Lucca Oil, ℥ij taken at the two chief meals of the day. ℞ Aloini, gr. ss, Ext. Nux Vom. gr. ss, Ferr. Sulph. gr. ss, Myrrhæ gr. ss, Saponis gr. ss, M. Sig. j before the last meal of the day; Ipecacuanha, gr. ss may be added to the foregoing if motions are hard and dry, and if there is no special weakness of the heart, and Belladonna Extract, gr. ss, will relieve griping if added to the aloin pill. Quin. Sulph., gr. ij with Pil. Rhei Co. gr. iij, taken after the last meal often relieves constipation; for a cholagogue, ℞ Aloini, gr. ¾, Mass Hydrarg. gr. vi, Ext. Hyoscyami, gr. ix. M. Ft. Pil. iij. One at night, as required; useful in bilious attacks. ℞ Aloini, gr. ¾, Pulv. Aromat., gr. ix, Ext. Hyoscyami, gr. vj, M. Ft. Pil. iij, Sig. One at night; useful where Mercury is inadmissible. Rhubarb in form of compound powder or aromatic syrup, useful in children; Tinct. Podophyllin; Strychnine with Aloin et Belladonna, *e. g.*, ℞ Aloin, gr. ¼, Strych. Sulph. gr. 1/60, Ext. Bellad. gr. ¼, Pulv. Ipecac. gr. 1/10, M. Ft. Pil. Sig. One at night; Ipecacuanha, *e. g.*, ℞ Pulv. Ipecac. gr. j, Pulv. Nux Vom. gr. ss, Pulv. Pip. Nigræ gr. ss, Ext. Gentianæ, gr. j, Sig. One before breakfast if bowels are very torpid; Physostigma, ℞ Ext. Physostig. gr. ss, Ext. Bellad. gr. ij, Ext. Ergot, gr. xij, M. Ft. Pil. vj. Sig. One at night for constipation where spinal cord is irritable; Arsenic, Liq. gtt. j to iij t.d. largely diluted if constipation be due to catarrh of stomach and intestines. ℞ Sod. Phosph. ℥ss, Aq. Bull. ℥jss, Ext. Cascar. Sag. ℥ss, Elix. Aurantii, q. s. ft. ℥iv, M. Ft. sol. Sig. ℥j at bedtime, in bilious attacks; Sulphur as mild laxative; Magnes. Sulph. hypodermically, x centigrammes; Colocynthin hypodermically, gr. ⅛, with Cocaine, gr. j. Carduus Mariæ (p. 31); Collinsonia Canadensis, Liq. Ext. ♏ij to x, Tinct. ♏v to xxx, in constipation due to hæmorrhoids (p. 43); for constipation in women, ℞ Ext. Aloes Aquos gr. iij, Ext. Bellad. gr. ½. M. One pill, or half or a quarter of a pill, as required, every night.

(Vol. 1889, p. 204.) Injections of Glycerine, ℥j; one-third part water may be added to the injection.

Constipation in Children.

Synopsis.—(Vol. 1888, p. 175.) Enemata of Soap and Water, or Olive Oil and Water, ℥ij twice or thrice in twenty-four hours; if they fail, Turpentine ℥j, or Ol. Ricini ℥j, with Olive Oil ℥ij, the Yolk of One Egg, and Warm Water to ℥iv; Ol. Ricini; Podophyllin, B.P. Tinct. gtt. iij in sugar; Strychnia (Tinct. Nux Vom. a few drops) in relaxation and want of

nerve power, also with **Iron** in anæmia, with **Decoct. Aloes** added; **Belladonna**, large doses, for constipation with flatulent colic; **Nitric Acid** with **Taraxacum** if liver is torpid; **Calomel** if bile is deficient, tongue furred, with frontal headache and anorexia; **Magnes. Sulph.** in plethoric cases if liver is torpid, in Aq. Menth. Pip. with Tr. Cardamom and Syr. Zingib.; **Malt Ext.** 5j in milk t.d.; **Tamarinds** in confection; **Sulphur**; **Cod Liver Oil**, gtt. x to lx; **Calcined Magnesia** should not be given.

(Vol. 1889, p. 207.) **Glycerine Injections**, gtt. xl to lx; **Soap and Water Enemata** (Oss.), ℞ Tr. Nux Vom. ♏ss, Tr. Belladonna, ♏x, Infus. Sennæ, ♏xx, Infus. Calumbæ, ad 5j. M. Ft. Haust. t.d. præ cib. reduced to once daily. **Ext. Cascar**, gtt. xx, with **Tr. Belladonna**, gtt. x in a little **Glycerine, Sulphur**, gr. ss, coloured with **Cochineal**. If motions are hard, ℞ Sod. Sulph., grs. v to x, Quin. Sulph., gr. ¼, Tr. Nux Vom. ♏ss, Ac. Sulph. Arom. ♏j, Aq. ad 5j. M. Ft. Haust. t.d. s. for a baby six months old. If food irritates mechanically or ptomaines and poisonous gases form, **Calomel** ⅙ gr. doses with **Sod. Bicarb.** in a little sugar is the best remedy, repeating it half-hourly until ½ or j grain is taken; this will also be useful if hard balls of pale faces are voided, or when there is peevishness and anorexia with or without fever, also in pleurisy, pneumonias, diphtheria or helminthiasis.

CONVULSIONS (in Children).

Henry Dwight Chapin, M.D., New York.

Mr. H. Valentine Knaggs ("Archiv. Ped.," May, 1889,) recommends the use of **Sulphide of Calcium** in infantile convulsions, which often occur from dentition, falls on the head, meningitis, and acute tuberculosis. The dose required is small; for infants under six months of age, 1 grain of the sulphide of calcium may be dissolved in ½ a pint of water, and a teaspoonful of the solution given hourly, when the dose may cautiously be increased if thought desirable. In children over one year of age, less caution will be required. The dose will vary from ⅛ to ½0 of a grain every hour, or less frequently, according to the severity of the case. The drug must be freshly prepared and active, as it soon loses its virtues and becomes inert. It may be mixed in powders with sugar of milk, and a packet of them enclosed in tinfoil. Mr. Knaggs likewise states that antipyrin may sometimes be alternated with the sulphide with advantage, although these two drugs appear to be antagonistic to one another. Thus, in infantile convulsions antipyrin, in doses of ½ to 2 grains, repeated frequently, will often aggravate convulsions; but if it should appear that the sulphide is exerting too depressing an effect on the nervous system, antipyrin alternated with it will serve by its stimulative action to counteract this effect.

Synopsis.—(Vol. 1888, p. 177.) **Aconite**, ♏ ½, half-hourly, when resulting from chill; **Belladonna**, ♏j, in reflex irritation of teething, also **Pot. Brom.** grs. ij to v t.d.; **Ignatia**, Tinct. ♏j to ij in reflex irritation from intestines; **Chamomile Oil or Tincture**, gtt. iv to vj in teething, with intestinal irritation causing greenish stools and diarrhœa; **Mild Laxatives** if indigestible food

is the cause; **Hot Blanket Pack.** **Allyl** in capsules containing v drops, ij to iv capsules daily in infantile convulsions (p, 11).

(Vol. 1889, p. 210.) R Tinct. of Musk, Tinct. of Castoreum, Sulphuric Ether, āā ♏xxxij, Paregoric, ♏viij. M. Six drops given hourly in a teaspoonful of sugared water or milk. In infantile convulsions, **Urethan**, 5j or more; also, **Solanin**, gr. j t.d. in convulsive attacks. In traumatic tetanus, **Bromide** of Coniine, gr. $\frac{1}{12}$ to $\frac{1}{6}$ (Duncan).

CORNEA (CONICAL). *W. Lang, F.R.C.S.*

Panas has made use of clear glass shells, somewhat resembling an artificial eye, the corneal part being the same curve as the normal cornea. With the aid of **Cocaine** this shell is placed over the conical cornea and is worn without inconvenience for several hours. In one case the vision was raised from counting fingers at 2 feet to $\frac{6}{18}$, and ability to read a newspaper readily. The writer would recommend every one to try the effect of high convex cylinders before proceeding to operate on a conical cornea. On several occasions he has been able to make a patient read Ji and $\frac{6}{18}$, and even $\frac{6}{9}$, with a simple convex cylinder of from 5D to 15D. Grandclément has tattooed the summit of the cone with the result that the cone did not increase in size and the vision was at once greatly improved.

Synopsis.—(Vol. 1889, p. 212.) Peroxide of Hydrogen for rodent corneal ulcers.

CORNS OR CALLOSITIES—To remove from the Sole.

Unna ("Monat. für Prakt. Derm.") observes that the treatment of subplantar corns is very much facilitated by a judicious combination of **Salicylic Plaster** and **Glycerine Jelly.** A ring of glycerine jelly about the diameter of the wart is painted round it with a fine but stiff bristle paint brush. When this ring of jelly has quite set and become dry, a circular piece of the strongest salicylic plaster muslin (salicylic 40, creasote 40), is cut sufficiently large to fit within the ring of jelly; jelly is now painted over the ring of jelly already made, and the piece of plaster itself; and to make assurance doubly sure, a third coat of jelly should be painted widely over all; and when these have become almost dry, a layer of cotton wool is to be placed and pressed on. The larger the surface covered with the jelly the less the local pressure on the corn. In the case of feet which perspire much, and particularly in hot weather, a single turn of a soft muslin bandage should be folded round the affected part of the foot, before the jelly has become quite dry, covered with a coating of jelly and then with wool, or the coating of jelly itself, and the neighbouring part of the foot is painted with flexible collodion. In this way one can, even in the heat of summer and in those whose feet sweat freely, keep the plaster in position. The dressing is changed when it becomes spontaneously loose, at the

oftenest once or twice a week, the horny layer acted on by the salicylic acid is removed, and a new dressing applied; and this had better be continued for some time after the wart has been cured.

CORYZA.

Synopsis.—(Vol. 1888, p. 181.) **Ammon. Chloride**, internally and inhaled, ℞ Quin. Sulph. gr. xviij, Liq. Arsen. ♏xij, Liq. Atrop. ♏j, Extr. Gentianæ, gr. xx, Pulv. Gum Acac. q. s. ut fiant pil xij. Sig. One every three, four, or six hours. Specific in cold (Whelan). **Quinine**, gr. j to ij, and **Dover's Powder**, gr. ij to v every three or four hours. Inhalation of **Ammonia**, or an occasional dose of **Salicylate of Ammonia** to favour secretion; **Douche**, containing a teaspoonful of Sodium Chloride to half-pint warm water, for obstruction in the nasal passages; **Plug of Cotton Wool** in each nostril, saturated with **Cocaine Solution**, 5 to 10%, or **Menthol Solution**, 10%; **Sod. Benzoatis**, iv to vj grammes; **Morphine**, one dose may cut short cold; **Belladonna** will control secretion and relieve in second stage; **Atropine**, or **Atropine** with **Morphine**; **Cocaine** applied locally will often cut short a rhinitis; **Menthol** inhalations soothe the irritation. **Alstonia Constricta**, Tinct. 5j to ij in recent colds (p. 11); **Pulsatilla**, Tinct. ♏j to v, in nasal, conjunctival, bronchial, vaginal, and vesical catarrhs (p. 84).

(Vol. 1889, p. 34.) **Concillana Bark** in acute or chronic nasal catarrh locally applied.

COUGH. (See "Spasmodic" and "Whooping.")

COXITIS (Senile). *Walter Pye, F.R.C.S.*

Can any real relief be given in Senile Coxitis?—Senile coxitis, a non-suppurative, spasmodic, painful affection of the hip, always associated with wasting and stiffness, is a variety of rheumatoid arthritis, and its course is progressive, and usually unaffected by any treatment. Dr. H. L. Taylor, noticing the frequency with which these cases dated their commencement from some injury, claims to have successfully treated several by thorough counter traction, effected by a long splint and a stirrup and weight. This is kept on the leg for a month or six weeks, after which time a supporting splint allowing of some locomotion is applied. Two cases are given in which this line of treatment proved very successful. ("New York Med. Jour.," 15th Dec., 1888.)

CRANIO-CEREBRAL TOPOGRAPHY. (See "Brain.")

CRANIOTOMY. (See "Obstetrics.")

CROUP. (See also "Pneumonia and Croup.") *P. Watson Williams, M.B.*

Mercurial Vapour has been successfully used in this affection by Dr. Rothe, of Altenburg, who relates two cases of apparently non-membranous croup in which, when the laryngeal stenosis became so great as to oblige him to propose tracheotomy, the inhalation of the vapour of **Calomel** produced such a remarkable change for the better that he was able to dispense altogether with the operation. He rigged up a sort of tent over the child's head and vaporised thirty grains of

calomel on a metal plate over a spirit lamp. This produced a great improvement in the breathing in a few minutes, and shortly afterwards the child fell asleep bathed in perspiration. The inhalation was ordered to be repeated every two or three hours, but with smaller doses of calomel, also whenever a severe attack of dyspnœa came on an extra inhalation was given, and never failed to produce the desired effect. Though the inhalations were continued for a couple of days there was no salivation or diarrhœa, but the vapour set up some little irritation about the eyes which made the little patients rather fractious, otherwise no unpleasant effects were produced.

Turpentine in Croup.—Dr. Kewentaner, of Constantinople, who some two years ago recommended the internal use of large doses of pure **Turpentine** in croup, has recently published two cases treated successfully in this way which had all the appearance of being hopeless, except perhaps through the performance of tracheotomy. Dr. Kewentaner gives a teaspoonful of pure turpentine at once, which produces violent attacks of coughing, during which a quantity of mucus and ultimately of croupous membrane is brought up. The dose is sometimes repeated more than once at intervals, and after the patient has begun to recover, a mixture of turpentine and mucilage is given. In one of the cases a spray consisting of Turpentine (4 parts), Carbolic Acid (4 parts), Alcohol (3000 parts), and water (1000 parts), was used with the best results.

REFERENCES.—"Lancet," April 27, 1889; "Memorabilien," 6 Heft, 1889.

Synopsis.—(Vol. 1888, p. 183.) **Bichloride of Mercury** internally, with **Ichthyol inunctions** and **Antipyretics** given in enemata (Verner). **Potass. Iod.** with **Tinct. of Iodine** 2 to 4% solution of the iodide to children under three, 4 to 10% to older children, ℥j being used hourly; **Bromine** locally and for inhalation; Bromine (pure) Potass. Bromate, āā j to ij parts, Distilled Water, cccc parts, for inhalation; **Ferr. Perchlor.**, ℥vj, Aq. ℥vj; ℥ij hourly for twelve hours; **Bougies**, containing Cocaine Hydrochlor., gr. ¼ to ½, **Boric Acid**, gr. xv, **Starch** and **Powdered Acacia**, āā gr. jss and Glycerine q. s. are passed into nostrils and melt in an hour and lessen nasal troubles (Reierson). **Digitalis** and **Calcium Sulphide** internally, *e. g.*, R Calcium Sulph. ·05 grammes, Digitalis ·001 grammes, Quin. Arseniate ·001 grammes, M. Ft. Pil. Sig. One every hour day and night for two days (Galicier); in diphtheria of the fauces, R Decocti Quininæ Ext. ℥j in ℥v, Potassæ Chloratis, ℥ss to j, Syr. Quininæ ℥j, M. ℥j sec. hor, alternately with painting the affected parts with **Solution of Iron** and **Carbolic Acid**, *e. g.*, R Liq. Ferr. Sesquichlor., gtt. x, Ac. Carbol., gr. v, Glycerinæ, Aq. Destill. āā ℥ss, M.; **Irrigation** with lime water to facilitate separation of membrane; **Fumigations**; **Vaporisation of Turpentine** and **Coal Tar**; saturating room with **Eucalyptus Vapour** and **Phytolacca Decandra**, Tinct. ℥ij to v, used internally.

(Vol. 1889, p. 34.) **Concillana Bark**, grs. v. indicated in membranous croup.

CYSTITIS. *E. Hurry Fenwick, F.R.C.S.*

Dr. Lavaux describes a method of washing out the bladder without a catheter by means of atmospheric pressure, in the treatment of painful cystitis. The apparatus consists of a reservoir, into which the medicated fluid is poured. This may be of any form, but it is essential to have it graduated, in order that the quantity of fluid injected may be noted. A rubber tube with a guarded nozzle conducts the fluid from the reservoir into the penis. The method of using the apparatus is, first, to place the fluid in the reservoir, and, forcing out the air from the tube, the nozzle, covered with its shield, is passed into the urethra. The patient lying upon his back, the fluid is permitted to flow into the bladder. The proper height for the reservoir is about one and a half metres above the patient. As soon as the patient feels the desire to urinate, the nozzle is removed from the urethra, and he is allowed to empty his bladder ; then the nozzle is again introduced, the fluid again permitted to flow into the bladder until the desire to pass water is again felt. This operation is repeated as often as is judged necessary.

The solutions vary according to the case. Usually it is recommended to begin with **Boracic Acid**, employing a saturated solution. In very obstinate cases a solution of **Nitrate of Silver** is also used, and where the pain is excessive the injection of a 4 per cent. solution of **Muriate of Cocaine** is first thrown into the bladder, and allowed to remain three or five minutes, when the other solutions can then be injected. The temperature of the injected fluids should be from 100° to 104° F., when placed in the reservoir.

Many cases of different lesions of the bladder and urethra are given by Dr. Lavaux, in which this method of treatment has been employed, and the results have been so very favourable that he believes they could not have been obtained by any other means of treatment. [This method dates from 1875, Rep.]

Dr. More Madden, writing on the rapid curative treatment of cystitis in women, advises the dilatation of the urethra and the swabbing out of the vesical neck with pledgets of **Carbolate of Glycerine,** B.P. The pain may be relieved by a 10 per cent. solution of **Cocaine.** Two or three applications may be needed at intervals of a week to effect a cure.

Tubercular Cystitis.—In most cases the symptoms are very marked ; but Dr. Philip records a case of deep tubercular ulceration of the anterior wall of the bladder with scarcely any symptoms. There was a persistent absence of cystitis, or even discomfort on micturition, and large "membranes" were passed per urethram without the patient's knowledge. These "membranes" were masses of shreddy, almost

pultaceous substances, which were proved by the Ehrlich-Weigert method of staining to be crowded with the tubercle bacillus. The disease proved fatal. The vesical appeared to be secondary to the lung trouble.

Is Tuberculosis of the Bladder curable?—Sufficient time has not yet elapsed, nor has sufficient experience accumulated to affirm definitely that suprapubic cystotomy and scraping out the diseased deposits, followed by free drainage, as practised by Reverdin, Guyon and others, is a radical cure. That free drainage by itself is not sufficient is generally believed; that iodoform emulsion injections, as recently recommended by Mr. Berkeley Hill, is also powerless in most advanced cases even to relieve, is established by experience of four years' trial of the injection in this disease at St. Peter's Hospital, for urinary disease. It is significant that in Reverdin and Guyon's cases a most successful result was obtained by *scraping*, and in the case under Guyon the tubercle bacillus in the urine notably lessened in amount after the operation, and finally ceased. (Cf. "Prostate, Diseases of.")

Is the Bacillus Tuberculosis easily found in the urine in Reno-Vesical Phthisis?—Newman advises the following method: (1,) Select the largest and most consistent particles of the débris from *freshly* passed urine; (2,) Flatten out the same into a thin layer by pressing it between two thin cover glasses; (3,) Air-dry the films and float the cover glasses film downwards in a solution of aniline magenta; (4,) Abstract all the stains from all the structures other than the tubercular bacilli, by passing the cover glass through a 25 per cent. solution of nitric acid, the action of which may be arrested by washing with cold water; (5,) Prepare at least a dozen specimens, and use a magnifying power of 750 diameters.

Dr. Frank Billings warns us that the preputial and labial smegma bacillus gives the same colour reaction, and has a form so very nearly the same as the tubercle bacillus, as not to be differentiated from it by means of the microscope.

REFERENCES.—Lavaux, "Du Lavage de la Vessie sans Sonde à l'Aide de la Pression Atmosphérique"; More Madden, "Brit. Med. Jour.," March 2, 1889, p. 467; Philip, "Internat. Jour. Med. Sci.," July, 1889; Berkeley Hill, "Brit. Med. Jour.," July 16, 1889, p. 8; Newman, "Surgical Diseases of the Kidney," 1888, p. 292; Billings, "Chicago Med. Jour. and Exam."

Synopsis.—(Vol. 1888, p. 186.) **Iodoform Bougies**, gr. v in each, passed and dissolved in the bladder; **Borax, Boracic Acid** or **Boroglyceride**, as soothing and antiseptic injections; **Quinine, Carbolic Acid** and **Corrosive Sublimate Solution**, $\frac{1}{1000}$, are powerfully antiseptic; **Diluents** and **Belladonna** are most reliable internally; **Naphthaline**, gr. j to iv t.d.; **Collin-**

sonia Canadensis, Fnct. ♏xx to ʒij, for acute cystitis, combined with Aconite and Morphia. Chimaphila, Liq. Ext. ♏j to x, Tinct. ♏v to xx (p. 38); Hydrastis, Ext. Liq. ♏v to xxx, Tinct. ♏v to ʒj (p. 63).

(Vol. 1889, p. 215.) *Chronic Purulent Cystitis:* ℞ Acid Borac. ʒij Potass. Nitrate, ʒss, div. in tales viij, one daily in a pint of Infusion Uva Ursi—say, a small teacupful every two hours. Creolin, ½% solution as injection in chronic cystitis; Resorcin injection, 2 to 15% in gonorrhœal cystitis—two or three days between each injection. *For Irritable Bladder:* Lukewarm water with Tinct. Opii, Cocaine, ¼%, Resorcin, ½%, Carbolic Acid, ½%; If urine is ammoniacal, Sol. Potass. Permang, $\frac{1}{10}$% or Amyl Nitrite, gtt. iij to Aq. Oj are useful. Kava-Kava, ℞ Ext. Kav. Depur., grs. xlv Sacch. Alb., grs. ccc. M. Ft. Pulv. Divid. in parts x. Pulv. j ʒtis hor. quiets the vesical nerves, but is not curative (p. 50). Pichi Fl. Ext. gtt. xv to ʒj (p. 62).

CYSTS, CEREBRAL. (See "Brain.")

CYSTOSCOPY. (See "Bladder, Electric Illumination of.")

DELIRIUM TREMENS. (See also "Alcoholism.")

(Vol. 1888, p. 46.) Cypripedium, Tinct. ♏v to xv; Cypripedin, grs. j to ij as sedatives.

DERMATITIS HERPETIFORMIS. *W. Allan Jamieson, M.D.*

This disease, described first by Duhring, has now an established place among the recognized disorders of the skin. Shortly: The eruption is polymorphic, but may be uniform in the case under observation, or in the particular seizures. The lesions may be vesicular and bullous, or pustular, or alternately bullous and pustular. In many there are erythematous lesions or bulla on an erythematous base. There is a tendency to occur in groups, or for the eruption to extend circumferentially. Some constitutional disturbance, such as violent itching, at one period or another, is nearly always present, and shows a disposition to recur constantly in the form of repeated attacks, each of which may be of long duration. Brocq recommends, in addition to the usual rules for regulation of the health so far as this seems deranged, the administration of the **Arseniate of Soda**, commencing with moderate doses, but proceeding to the extreme limits of tolerance. Should there be fever, to give the **Hydrobromate of Quinine.** Locally, if the pain is severe, to open the bullæ with a needle rendered aseptic. To employ lotions of **Boric Acid**, or antipruriginous ones of **Carbolic Acid**, or of **Corrosive Sublimate.** Dusting with dry powders is sometimes the best application ("De la derm. herpet. de Duhring," Paris, 1888.)

Synopsis.—(Vol. 1889, p. 215.) Grindelia Robusta, Fl. Ext. ʒj to Aq. ʒiv or vj, locally. For burns, Cocaine Hydrochlorate, 5% solution (Anderson).

DIABETES. *Robert Saundby, M.D.*

The Treatment of Diabetes.—During the year, on the whole, there has been little to disturb the well-founded belief that **Opium** and **Alkalies** with appropriate diet constitute the best treatment for this disorder. It is not, perhaps, sufficiently understood that bread made from ordinary flour is one of the most injurious things a diabetic can eat. Of the various gluten breads in the market, that of Bonthron, of Oxford Street, is so superior that it deserves special mention. The use of alkaline mineral waters, Vals, Vichy, Contrexéville, is strongly advised; they may be taken with the juice of a lemon or a dash of claret. Prof. T. R. Fraser has confirmed the fact already well demonstrated by Dr. Mitchell Bruce, that codeine is only a feeble and expensive morphine ("Brit. Med. Jour.," Jan. 19, 1889). **Jambul** in a few hands has still done good, a somewhat striking case having been reported by Mr. George Mahomed, of Bournemouth ("Pract.," Dec., 1888). The value of **Antipyrin** in diabetes was discussed at the French Academy of Medicine, MM. Panas, Germain Seé, Dujardin-Beaumetz, and Robin agreeing that this drug possesses the power of controlling the formation of sugar, though M. Worms had not found any difference between the results of treatment by antipyrin and by sulphate of quinine ("Le Progrès Méd.," April 13, 1889).

The Reporter has used antipyrin in a good many cases without being able to observe any definite results.

There is unhappily no success in the treatment of coma. In a recent case under the reporter's care, inhalation of oxygen was tried without any good result, while subcutaneous injection of strychnine and intra-peritoneal injection of an alkaline solution also failed. With our present knowledge we can only say that such cases are always fatal in spite of all treatment.

Synopsis.—(Vol. 1888, p. 189.) **Arsenite of Bromine**, gr. $\frac{1}{20}$ to $\frac{1}{4}$, or **Clemens's Liquor**, ℥ij to x; **Salicylate of Sodium**, gr. x to xx; **Pot. Bromide**, gr. x to xxx; **Citrate of Lithia**, gr. ij to v; **Salicin**, gr. x to xx; **Boracic Acid**, gr. x to xx; **Uranium Nitrate**, gr. j to ij; **Jambul**, gr. iij to v; **Lactic Acid**, ℥v to xx, or Ac. Lactic Dil., ʒss to ij or more; **Oxygen**, in aerated waters; **Martineau's Specific**, Carbonate of Lithium, 20 centigrammes, added to a spoonful of the following solution, ℞ Arseniate of Sodium, xx centigrammes, distilled water, d centigrammes; this quantity to be used daily, with and between meals; **Painting with Iodine**, in early stage, for boils and carbuncles; **Ung. Potassæ Sulphuratæ** in conjunction with **Opium** internally, or **Borax**, or **Boracic Acid Lotion**, (saturated), for the pruritus; **Chlorate of Potash and Borax**, gr. x of each to Aq. Ros. ʒj, if gums are sore; **Soda Salicylate**, or **Ichthyol**, for neuralgia and rheumatism (p. 66).

(Vol. 1889, p. 216.) **Antipyrin, Salicylates**, and **Opium** in diabetic sciatica; **Antipyrin** and **Morphia** for erythema and œdema of feet; **Opium**

and its **Alkaloids, Codeine, and Morphine**; The **Carlsbad** cure (not permanent); **Jambul Seed**, grs. v every four hours; **Syzygium Jambolanum Bark** has been used in 10% solution, about ʒx being taken in 2 days; **Antipyrin**, ʒss to jss doses daily; ℞ Potass. Permang., grs. xx, Aq. ʒj, M. S'g. v drops 4 times a day in Bordeaux wine; ℞ Menthol, grs. xv. Cocaine. grs. v, Chloral Hydrat., grs. iij, Vaseline, ʒj, M. pomade for neuralgia. For pruritus pudendi when there is no eczema or local abrasion, **Peppermint Water** made by putting a teaspoonful of borax into a pint bottle of hot water, adding v drops of **Ol. Menth. Pip.** and shaking well; then bathe the parts with a soft sponge; when rawness or eczema is present use **Olive Oil** with **Iodoform**, grs. v. to the ounce.

DIARRHŒA. *F. de Havilland Hall, M.D.*

Further experience has confirmed the favourable opinion expressed in the "Annual" for 1889 concerning the action of **Naphthalin** in diarrhœa. Holsti gives it to adults in doses of 0·5 gramme four or five times a day, but it should not be given for a longer time than from ten to fourteen days. For children of from one to two years old, he gives 0·12 to 0·18 gramme four times a day. He also specially recommends Naphthalin in severe chronic enteritis where other drugs have been employed without benefit. ("Lancet," December 22, 1888.)

Tubercular Diarrhœa.—Any suggestions for the treatment of a symptom which is so often intractable, deserve attention. Huchard tried **Lactic Acid** in doses of from thirty to sixty grains daily, but with almost negative results. Small doses of **Iodoform** have, however, arrested the diarrhœa in such cases. MM. Sezary and Anne have, on the other hand, obtained excellent results with **Lactic Acid** in doses of 30 to 120 grains daily.

REFERENCES.—Huchard, "Revue Gén. de Chir. et de Thérap." Nov. 22, 1888; "Therap. Gaz." Jan. 15, 1889.

Synopsis.—(Vol. 1888, p. 196.) ℞ Tinct. Cannabis Indicæ, ♏x, Sp. Chloroformi ♏x, Tinct. Kino ʒj, Aq. Menth. Pip. ʒj, M. Ft. Haust. in summer diarrhœa and dysentery; or ℞ Tinct. Cannabis Ind. ♏x, Liq. Morph. ♏v to x, Sp. Ammon. Aromat. ♏xx, Sp. Chloroformi ♏xx, Aq. ad ʒj, M. Ft. Haust; Sig. ʒj hourly or ʒtis hor, according to severity; **Sod. Salicylate**, gr. j to iij sec. hor, according to age (from three months to three years), is used as antiseptic, and controls constant vomiting; **Naphthalin**, gr. j to v, rubbed up with sugar of milk; **Resorcin**, gr. ½ to ij, and its bi-chloride, gr. $\frac{1}{12}$ to $\frac{1}{10}$, but is apt to cause vomiting; **Bismuth** in large doses. As an antiseptic method of treatment ℞ Sp. Ammon. Aromat. ʒj, Sol. Ac. Carbol (1 in 20) ʒjss to ʒij, Chloral Hydrat. gr. xv to xx, Tinct. Belladonnæ, ♏xv to ʒss, Syrupi ʒss, Aq. ad ʒij, M. Ft. Mist. ʒj sec. hor; **Opium** in early stages or in collapse; the **Bromides** may be substituted; **Salicylate of Iron** when the stools are sour but not necessarily fœtid; **Ice-water Injections** in collapse, ʒij or iij. In tropical diarrhœa **Pepsine**, gr. v, in the early stage; also **Chloride of Ammonium**, gr. xx q.d. with a pill, ℞ Pulv. Ipecac. gr. j, Pil. Rhei Co. gr. iij, Ext. Taraxac. q. s. at night. **Acorn**, roasted and mixed with powdered cocoa, a teaspoonful thrice daily (p. 8); **Bismuth Salicylate** (p. 25); **Con-**

essine, alkaloid of Holarrhena Antidysenterica (p. 59); **Hydrochinon** (p. 64); **Ichthyol** (p. 65).

(Vol. 1889, p. 222.) **Naphthalin**, beginning with grs. iv ss to xv daily, combined with **Alcohol, Tinct. of Opium**, and **Peppermint**, useful in chronic intestinal catarrh, cholera morbus in children and enteric fever; **Salol** indicated by vomiting, purging, and cramps, also summer diarrhœas of children and in dysentery giving gr. $\frac{1}{4}$ sec. hor. to a child of 2 years; from 2 to 5 years grs. $1\frac{1}{2}$; from 5 to 12 years grs. iij, and above this age grs. iv to v, continuing until the stools cease; **Irrigation, Sterilization of Foods**; **Geranium Maculatum**, grs. x to xl, and as rectal injection in diarrhœa, typhoid, cholera, and dysentery (p. 42); **Plantago Ispaghula Seeds** (p. 62).

Hill and Tropical Diarrhœa. *Alexander Crombie, M.D.*

It is convenient to consider hill diarrhœa and tropical diarrhœa together, because, although they differ in certain particulars, they present many points in common, and a protracted and severe case of hill diarrhœa, which has continued after a descent into the plains, is in no way distinguished from one of tropical diarrhœa originating there in symptoms, pathology, prognosis, or in the effect of treatment. In their earlier and less severe forms they are both cyclical diseases, the diarrhœa, which constitutes their leading manifestation, being confined to between the hours of from 4 to 7 a.m. or 11 a.m. In such cases the patient is free from diarrhœa for the remainder of the day, till it recurs at the same hour the following morning. In severe and protracted cases this cyclical character of the disease is lost sight of. Hill diarrhœa, if taken in time, can usually be cured within twenty-four hours by a descent to a lower elevation, but not always so, especially in persons who go to the hills and suffer from it regularly every season. In such persons it is liable to remain with them through their winter tour of duty in the plains, and gradually develop into the tropical diarrhœa of the plains. Many such cases do not even recover on leaving the tropics, if the degenerative changes in intestine and liver have proceeded too far, and secretion, digestion, and absorption have alike become impossible.

It has generally been assumed, from the colourless ex-bilious appearance of the stools, that the liver is the organ which is chiefly at fault in these diseases, and that its function is practically in abeyance. Hepatic stimulants and cholagogues have therefore been given with perseverance and hope, but never probably with any appreciable benefit to the patient. Immediate benefit, on the other hand, follows, as a rule, in hill diarrhœa the use of **Peptonized Milk**, or even the administration of **Pepsine, Ingluvine** and **Liquor Pancreaticus** after meals, and in mild and recent cases patients subject to hill diarrhœa are able by such means to keep their dyspepsia and diarrhœa in fair control

at high elevations or during the season or epidemic period (June, July, and August). The unquestionable success of such remedies in mild cases would seem to indicate that the catalytic secretions of the stomach, pancreas, and intestine are at least as much in abeyance as that of the liver. In this connection the paper read by Dr. T. J. Walker before the Royal Medical and Chirurgical Society in March, 1889, should be consulted, as tending to show that abrogation of the function of the pancreas is capable of giving origin to a diarrhœa similar to that so common at the Himalayan hill-stations.

The use of **Pepsine**, and especially of **Peptonized Milk**, has also been strongly recommended in tropical diarrhœa of the plains by Surgeon Harrison Young, and there can be no reasonable question of its extreme usefulness.

More recently the **Bichloride of Mercury** has been advocated by Surgeon Macpherson and Surgeon-Major Barry in hill diarrhœa, and they publish cases in which the diarrhœa has ceased within a day or two of the commencement of the use of the liquor ; **Hydrarg. Perchlor.** in ½ dr. doses twice or three times a day, or in 10 minim doses every hour during part of the first day of treatment. The effect is probably as much due to its antiseptic anti-fermentative as to its cholagogue action. The combined use of peptonized milk with perchloride of mercury internally, in the manner prescribed by these officers, would seem to hold out the best hope of successful treatment in hill diarrhœa, and their beneficial effect in tropical diarrhœa is also undoubted.

Fayrer continues his advocacy of an exclusive **Milk Diet** in the treatment of the "white flux," which occurs in Europe in officers who have retured from tropical climates. He says that cow's milk alone should be the food of such patients, and should be taken in small quantities of from 4 to 6 ounces every hour, nothing else of any kind being given, and from 2 to 4 quarts imbibed in the twenty-four hours, and the treatment adhered to for three weeks, a month, or six weeks. Not till the glazed appearance of the tongue disappears, and the organ returns to its normal size, should the discipline be relaxed. Under this treatment the necessity for drugs is dispensed with, and only small quantities of brandy or whisky allowed to those long accustomed to their use.

REFERENCES.—"Ind. Med. Gazette," Dec., 1885 ; "Ind. Med. Gaz.," July, 1887, and July, 1888 ; "Lancet," April, 1889.

Diarrhœa and Indigestion of Children.

Henry Dwight Chapin, M.D., New York.

Mr. George Rice ("Practitioner," Dec., 1888,) advocates the use of **Glycerine Injections** in diarrhœa. Several injections of 2 drachms

each are usually sufficient to control the affection. Glycerine has been largely used lately in the treatment of constipation, but no mention is made of cases where it has been used for the opposite condition. The author does not pretend to say how glycerine acts in these cases, though it is possible that both the diarrhœa and the constipation have a common cause. The injections are easily made, and thus used, glycerine has proved a valuable remedy in the case of children suffering from diarrhœa or prolapse.

Dr. Ehring ("Gaz. Hebdom. des Sci. Méd.," September 15, 1888,) has administered **Salicylate of Bismuth** at the clinic of Professor Ranke to more than two hundred children suffering from various gastro-intestinal troubles, consisting of simple dyspepsia, acute and chronic gastric catarrh, gastro-intestinal catarrh, intestinal catarrh, enteritis, dysentery, etc. In the greater number of cases the children were in their first infancy, but some of the cases were children of ten or twelve years of age.

The salicylate of bismuth was preferably administered in the form of a mixture, 4 to 5 parts by weight to 100 parts of water, with 10 to 20 parts of glycerine, or, better still, in some syrup or mucilage with a little red wine. Of the above mixture a dessertspoonful was ordered every two hours, or oftener if occasion demanded. In cases of flatulence with considerable distention of the intestine with gas, or where the stools had a markedly offensive odour, salicylate of bismuth given before meals is claimed to have had a good effect. It is never prudent to prescribe the remedy to young children in the form of a powder, from the liability which it has of producing ecchymoses in the gastric mucous membrane.

Dr. Baruch ("Med. News," vol. liii. No. 1,) treats the summer diarrhœa of infants by removing bacteria from the intestinal canal. A full dose of castor oil, or, when the stomach is irritable, of calomel will remove the entire mass from the upper tract. It will not be necessary to repeat the purgative if it is followed by thorough irrigation of the large intestine with sterilized warm water. He believes that in this procedure we possess a most valuable remedial measure for summer diarrhœa. But it must be borne in mind that irrigation cannot be accomplished by an *enema* of warm water. This would act as an irritant and create further disturbance. A rubber horse catheter, or a large Nelaton catheter should be used for this purpose, because its walls are firm and yet elastic, and its length admits of its deep introduction. It should be attached to the pipe of a fountain syringe containing 1 quart of water that has been boiled for half an hour, and in which ½ a drachm of bicarbonate of sodium has been dis-

solved. The infant is placed upon the abdomen in the lap of an attendant. The tube, anointed with vaseline, and firmly held between the thumb and index finger of the right hand, is gently introduced into the anus. The pressure of the fingers is now somewhat relaxed, in order that the water may flow while the tube is being gently but firmly pushed into the intestinal canal. Whenever it meets an obstruction it should be withdrawn a little and gently persuaded to pass upward. Sometimes it is more readily introduced when disconnected from the syringe. When the upper point cannot be introduced further, it is held steadily until a quart of water has been introduced. The irrigation may be repeated every three, four, or five hours, according to the case.

Dr. W. L. Carr ("Arch. Ped.," September, 1889,) recommends the use of **Salol** in the gastro-intestinal derangements of children. For children under six months ½ a grain every two hours for three or four doses will be found sufficient; between the ages of six and eighteen months, ½ a grain to 1½; at two years, 1½ grain to 2 grains will usually be efficacious. The drug is best dispensed, combined with some inert powder. It is especially indicated in the first stage of acute gastro-enteritis in children, and in the more chronic forms of entero-colitis, accompanied by slimy, bad-smelling evacuations. In the acute conditions it is necessary to keep the stomach at rest and administer 2 or 3 doses of Salol within five or six hours. For the more chronic state of catarrh, it is best given in somewhat larger doses before meals.

Naphthalin ("Jour. de Med.," Feb. 3rd, 1889,) may be given to children, in the first period of life with diarrhœa, in doses of 10 centigrammes every two hours. The following formula is recommended: —

℞ Naphthalin, 2·00 to 4·00 grammes | Bergamot ess. ·03 gramme.
Sacchari albi, 2·00 to 4·00 ,,
Sig.— Ft. pulv. et div. in chart, No. xx.

Naphthalin may also be given by the rectum, in a mucilaginous mixture, which will hold it in suspension, but will not dissolve it.

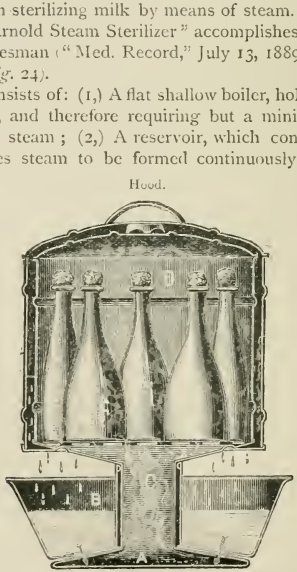
Dr. A. Seibert ("Archiv. Ped.," April, 1889,) advises **Stomach Washing** for the following conditions: (1,) In dyspepsia of infants, a condition characterized by the regurgitation of part of the child's food soon after each meal. A single stomach-washing will often suffice to check the vomiting and cure the case. Lumps of casein, which often have been in the stomach for days, are usually brought to day-light; (2,) In acute gastro-intestinal catarrh, or cholera infantum, the washing out of the stomach, as soon after the beginning of the vomiting as pos-

sible, will, in many cases, save the life of the child. It cleanses the stomach of remnants of decomposed and decomposing material, and of various germs; (3,) In cases of chronic catarrh of the alimentary tract, stomach-washing has given good results. Cases that have withstood all kinds of diet, all known old and new drugs, cases that have been diagnosed, as atrophy, marasmus, tuberculosis of the intestine, etc., have been cured by this treatment.

Sterilizing Milk.—There are two methods by which the **Sterilization of Milk** may be accomplished, by boiling and steaming. Professor Soxhlet was the first to sterilize milk for the purpose of infant feeding. The milk is placed in bottles having perforated stoppers and allowed to stand in boiling water for the requisite time. His apparatus has been described in a previous volume. It is cumbersome and somewhat expensive. During the past year an advance has been made in sterilizing milk by means of steam. The apparatus known as the "Arnold Steam Sterilizer" accomplishes this method.

Dr. T. M. Cheesman ("Med. Record," July 13, 1889,) has described this sterilizer (*Fig.* 24).

The cooker consists of: (1,) A flat shallow boiler, holding but a small amount of water, and therefore requiring but a minimum amount of heat to produce steam; (2,) A reservoir, which constantly feeds the boiler and causes steam to be formed continuously; (3,) The steam



(*Fig* 24.) A—Boiler. B—Reservoir. D—Steam Chest or Receiver.

chest or receiving vessel; and (4,) A hood, enclosing a space between itself and the receiver, which is constantly supplied with escaped steam, a device which causes a temperature once reached to be maintained so long as the heat is unchanged.

Sterilization is accomplished by bringing the object to be sterilized to the temperature of live steam, and maintaining it at that temperature for about forty-five minutes. Boiling for the same length of time, in a vessel the sides of which are exposed to the air, is not efficient, as the temperature in different parts of the vessel is found to vary considerably. This is the main objection to Soxhlet's apparatus, the principle being that of a water-bath, while in the cooker we have a steam-bath, in which any variation of the temperature is prevented.

Numerous tests have shown that with a single Bunsen burner, and ordinary gas pressure, the temperature of 100° C. is reached, in all parts of the receiving vessel, in less than ten minutes. The time required to raise the fluid to be sterilized to the same temperature is found to be directly proportional to its bulk. So that less time is required when the food is in divided quantities. When the temperature of 100° C. is reached, sterilization has commenced, and should be continued for the time specified, forty-five minutes, which time is necessary on account of the great resistance of the spores.

As a sterilizer, the cooker presents these principal advantages:—(1,) Its effectiveness in sterilizing; (2,) Economy, both of time and fuel; and (3,) Great convenience, on account of its portability.

The recommendations to any who might use it are as follows:—

That the food be prepared as it is to be administered, and that the quantity required for twelve or twenty-four hours' feeding be distributed in eight-ounce flasks or nursing bottles, providing one such bottle for each feeding, so that no unnecessary exposure or transference shall be had. In filling the bottles a funnel should always be used to keep the necks clean, and the fluid should be a full inch below the neck. The bottles should be plugged with cotton, extending well down into the neck, any impurities which this may contain, in the form of moulds or bacteria, being destroyed by the same process which sterilizes the food. The bottles are now placed in the cold receiving-vessel (to prevent breakage) and heat is applied by means of gas, or a kerosene or coal stove. To insure a complete sterilization, heat should be maintained altogether for one and a quarter hour.

Food thus prepared can be kept at ordinary temperatures for an indefinite period, doing away entirely with the use of an ice-pail or refrigerator for keeping the milk sweet.

DIETARY.

F. de Havilland Hall, M.D.

What is the comparative nutritive value of the Animal and Vegetable albumens? Dr. S. Rutgers, of Rotterdam, made certain dietetic experiments upon himself and his wife. For a period of rather over a month the albuminous articles of diet were taken in meat, and for a similar period the albumen was derived from peas and beans. The weight of the two persons, quantity, specific gravity and nitrogenous constituents of the urine, and the weight of the fæces were noted daily. In one of them the weight remained about constant; in the other there was a decided loss during the first period, which was not so marked in the second. During both periods the nitrogen excreted by the kidneys and the intestines did not differ materially from the normal amount. It follows that animal albumens may be replaced by those of vegetable origin without disturbing the nitrogen balance. The beans and peas proved very troublesome by giving rise to abundant intestinal gas and fæces, while meat and rice caused little of either. The acidity of the stomach and of the urine was notably reduced by the vegetable food.

Sterilized Milk.—By simply boiling milk all chance of infection from foot and mouth disease, tuberculosis, &c., in the cow can be prevented. If the bottles are closed while the milk is boiling the subsequent access of aerial germs is excluded, and the milk remains perfectly fresh and unaltered for two or three weeks. The best mode of closing the bottle is to use the new patent spring stopper. (See previous pages.)

Egg Albumen solution as a diet in fevers. The whites of a dozen raw eggs are whipped to a stiff foam in order to tear fully all the fine membranes in which the liquid albumen itself is enclosed; allow this to stand for at least an hour, and then take one tablespoonful of the clear yellow liquid which settles at the bottom of the vessel and mix it well with three to five tablespoonfuls of water; the latter should be boiled to a sterilizing heat and then left to cool again. Some sugar may be added to the water. To this sweetened mixture of white of egg and water, from fifteen minims to half-an-ounce of brandy is to be added, according to the age of the patient and the height of the fever. This fluid is given in doses ranging from a teaspoonful to two tablespoonfuls every ten or fifteen minutes, and it should be well cooled before administration.

REFERENCES.—"New York Med. Times," Dec. 22, 1888; "Brit. Med. Jour.," Dec. 8, 1888; "Trans. Med. Chir. Faculty of Maryland,' April, 1888, p. 225.

DIETETIC CURES. *F. de Havilland Hall, M.D.*

Weir-Mitchell Treatment.—This system is based upon the theory that certain forms of nervous affections, particularly hysteria, are due to a deterioration of the blood produced by its deficiency in fatty matters. In order to enable the weakened organism to digest an abundant supply of food, absolute rest, combined with massage and electricity, is enjoined. Another important factor is the removal of the patient from her habitual surroundings. Half a pint of milk is taken daily in the beginning and in a few days this quantity is increased until from two to three pints are given as the daily ration. The patient has also soft-boiled eggs, rolls with butter, broiled steak, a few vegetables, farinaceous dishes, and roasted potatoes. (See "Annual," 1889.)

The Banting Cure.—The bill of fare as modified by Vogel contains coffee, tea without milk or sugar, toast, soft-boiled eggs, lean raw ham, thin bouillon, lean meat, some few green vegetables, potatoes, and a little light wine. This treatment, though based on false physiological principles, namely, that fat is formed from fats and carbo-hydrates, has been successful in many cases. Careful supervision is, however, necessary, as much evil has resulted from its injudicious use.

The Ebstein Cure is based on the doctrine of Prof. Von Voit, that fat is formed chiefly by albuminous food-stuffs, particularly when given with carbo-hydrates. According to Voit, fatty substances, so far from having any influence on the formation of fat, actually prevent obesity by producing the sensation of satiation, so that less food is needed. Ebstein gives the following dietary, which was ordered for a man of forty-four :—

Breakfast.—One large cup of black tea without milk or sugar ; two ounces of bread toasted, with plenty of butter.

Dinner (about 2 p.m).—Soup often with marrow ; from 4 to 6½ ounces of roast or boiled meat, vegetables in moderation, leguminous preferably, but also cabbages. Potatoes to be altogether, and turnips almost, excluded. After dinner a little fresh fruit when obtainable. For second course, a salad or occasionally some stewed fruit without sugar. Two or three glasses of light white wine. After dinner a large cup of tea without milk or sugar.

Supper.—In winter almost invariably, in summer occasionally, a large cup of black tea without milk or sugar, an egg or a little fat roast meat or both, or some ham with its fat, Bologna sausage, smoked or fresh fish, about one ounce of bread well buttered, occasionally a small quantity of cheese, and some fresh fruit.

The Oertel Treatment.—The main principle of this method is to

deprive the body of as much water as possible, and to attain at the same time a strengthening of the heart muscle. The ingestion of liquids is reduced to a mininum, and the sensation of thirst is relieved by gargling. An increase of secretion of liquid is induced by the perspiration brought about by physical exercises and by the application of dry heat (steam baths). Oertel's system agrees with those above given in reducing the carbo-hydrates in the diet of the obese. It allows more fat than the Banting formula, and nearly twice as much albuminous food as Ebstein's, less than half as much fat as the latter, and about twice as much carbo-hydrates. The diet recommended by Oertel is as follows :—

Morning.—One cup of tea or coffee, with a little milk, altogether about six ounces ; bread about three ounces.

Noon.—Three to four ounces of soup, seven to eight ounces of roast or boiled beef, veal, game, salad, or a lighter vegetable, a little fish (cooked without fat) if desired, one ounce of bread or farinaceous pudding (never more than three ounces), three to six ounces of fruit, fresh preferred, for dessert. It is desirable at this meal to avoid taking fluids, but in hot weather, or in the absence of fruits, six to eight ounces of light wine may be taken.

Afternoon.—The same amount of coffee or tea as in the morning, with, at most, six ounces of water, an ounce of bread as an exceptional indulgence.

Evening.—One or two soft-boiled eggs, an ounce of bread, perhaps a small slice of cheese. Salad and fruit, six to eight ounces of wine, with four to five ounces of water.

The heart is strengthened by daily and continued mounting of elevations, persisted in until palpitation of the heart sets in, and resumed again when the palpitation has disappeared. Exhaustion is to be carefully avoided, great care is required in graduating the exercise to the patient's condition, and the amount of the work must be increased as the patient can bear it.

Dr. W. T. Smith reports a method of reduction of obesity which proved so successful in his own case that he has tested it in forty-two other cases, in most of which success was obtained. The plan which he follows is to confine the diet to rump-steak, cod-fish, and hot water for fourteen days, with the absolute exclusion of everything else. Taking meat in large quantities may lead to dyspepsia, but this can be easily overcome by reducing the meat to an essence. This may be done as follows : Take four pounds of beef, free from skin and fat ; cut it to pieces about an inch square ; place the meat in a close-fitting, air-tight jar ; stand the jar in a pan of boiling water, and let it simmer

for six hours. Pass the juice of the meat thus obtained through a sieve ; then measure four ounces of the fibrin of the meat ; pulverize it in a mortar, and stir it up with the essence ; divide this into four doses, and you will obtain the nitrogenous elements required of the quantity of meat to be taken at one meal. There is also a similar way of obtaining meat essence by using a pot called "Boule Américaine."

In treating his cases, in several instances he has been obliged to modify the amount of hot water and lessen occasionally the quantity of meat ; but as regards his own personal experience, he found that three pounds of rump steak and one pound of codfish were hardly sufficient to satisfy his appetite. The meat diet and hot water alone must be regularly adhered to for fourteen days, and the amount of hot water, taken at any time during the day, commencing at seven in the morning and finishing at half-past ten at night, varies from six and one-third pints, more or less, according to the powers of the patient.

The second epoch of twenty-one days the diet may be considerably varied as he reduces the hot water to four pints in the twenty-four hours, and he allows other kinds of meat, such as mutton-chops, free from fat, and chicken ; and, as regards fish, grilled turbot, whiting, or soles ; a little green vegetable, and some slices of plain unsweetened rusk.

The third epoch, thirty-one days, the hot water is reduced to about a quart a day, and he allows tea, stale bottom crust of household loaf, captain's biscuits, grilled fish, fowl, game, turkey, any joint, hock or claret, with seltzer water, in place of whiskey. As hot water is very unpalatable, a slice of lemon may be added to each tumbler.

No case of obesity should be treated by this method when the patient is suffering from any organic disease, unless it be some trifling malady. The loss of weight in nearly all cases will vary somewhat, but Dr. Smith states that his patients bear the treatment exceedingly well, and express themselves as feeling far better in health and able to take exercise with comfort. The first period of fourteen days is really the only hardship, and he has found very little difficulty in persuading patients to stick to the diet. As some alkali is essential, he prescribed five grains of the Bicarbonate of Potassium, to be taken night and morning.

References.—"Boston Med. and Surg. Jour.," Sept. 20, 1888 ; Ebstein on Corpulence ; "Therap. Gaz.," July 15, 1889; "Nineteenth Century," Nov. 1889.

DIGESTION (Disorders of).

Synopsis.—(Vol. 1889, p. 227.) Jaborandi used where saliva is lessened ; Papain.

DIPHTHERIA. *F. de Havilland Hall, M.D.*

Dr. Longstaff points out that the distribution of diphtheria is apparently *sui generis*; the mortality from the disease clearly is not regulated by the same causes as influence the general mortality, certainly density of population does not favour it. This disease appears to have a preference for certain special districts, the great majority of which may be described as rural and which have but a small proportion of their people living in towns.

The practical deduction suggested by these facts is, that the cause or causes of diphtheria should not be sought for primarily in any high development of civilization, such as sewers, but rather in some condition associated with a more primitive mode of life. Again, privies and ash-pits can hardly be important agents in breeding or disseminating the disease, or we should expect to find diphtheria exceptionally prevalent in those northern towns where such nuisances reach their worst, whereas the contrary is the case. On the other hand, low vegetable organisms developed in damp dwellings would perhaps fit in with the facts that have been brought forward; or again, some evil special to shallow wells or other primitive sources of water supply. The line of investigation, however, which seems to him most promising lies in comparative pathology. The peasantry live on terms of great intimacy with domestic animals, more particularly cows, sheep, pigs, and poultry (including pigeons). Some little known disease of some one or other of these creatures may be capable of inducing in men or women brought into frequent and close contact with them a trivial "membranous sore throat;" then, under suitable conditions of recipient and environment, the more generally recognised form of the disease "true diphtheria," or as it is used to be called "cynanche maligna" may result. The poison, perhaps gathering intensity and infectiveness, may then be conveyed into towns by farm produce such as milk, cream, or poultry, conceivably by eggs, meat, or vegetables; and lastly, through the persons first infected, the sources of water supply, or the public sewers, may get poisoned, and so indirectly aid in the spread of the disease.

Mr. C. E. Paget describes an outbreak of diphtheria occurring in a school, one side of which was damp, and the closets used by the pupils were in a very bad condition. He says: "I believe that the outbreak was occasioned either by the same causes which led to growths of moulds in the particular part of the school, or by the spores of the moulds themselves, having been drawn up into the atmosphere of the schoolroom, originating diphtheritic growths on the tonsils and fauces of certain susceptible pupils. The question of this susceptibility is a

point of sanitary importance. Only eight or ten of some thirty pupils in the suspected part of the school took the disease, and the majority of these were girls; the only discoverable explanation of this was that the insanitary closets, and especially the girls' closets, may have had a definite lowering effect upon the general health of some pupils more than on others, and the former would no doubt be susceptible to injurious influences that others escaped, and that they themselves might have repelled under ordinary circumstances."

Attention has of late been directed to the connection of mould-fungi with diphtheria. Even if further evidence is forthcoming to prove a causal relationship between the two, much will depend on the soil on which the spores settle as to whether diphtheria is produced. Impaired health, especially that brought about by insanitary conditions, seems to cause just the state of throat which affords a suitable habitat for the diphtheritic germs.

Dr. Jules Simon defines diphtheria as an affection of a pseudo-membranous order that invades by preference the superior respiratory passages, and its false membranes always contain Klebs's bacillus. MM. Roux and Versin have demonstrated the presence of Klebs's bacilli in diphtheritic membranes, and they have been able to produce a disease unquestionably diphtheritic from inoculations of cultivations. The cultivations, however, do not produce any local lesion unless the surface be excoriated and deprived of its epithelium.

Does membranous croup occur apart from diphtheria? Dr. Ranke states that in all cases of membranous croup that he could examine closely he found invariably that they were somehow or another connected with a case of diphtheria of the fauces, occurring in the neighbourhood either before or after. He therefore believed that all cases of membranous croup were caused by the diphtheritic virus.

Loss of knee-jerk in Diphtheria.—It is, or should be, well known that in the paralysis following diphtheria the knee-jerk is usually absent or feeble. This sign is of service for the purpose of diagnosis in certain cases. Dr. Hadden points out that its greatest service lies in the direction of prognosis and of treatment during the convalescent stage. "So long as the knee-jerk remains absent the patient cannot be considered free from the risks of paralysis and cardiac failure."

TREATMENT.—Caldwell's (Chicago) treatment consists in (1) Keeping the bowels open; (2,) Injection of 2 to 6 ounces of milk every two hours; (3,) Spraying the throat every hour until temperature is reduced

and breathing easy; then every hour, unless asleep, with the following mixture :—

R. Papain	ʒ ij	Acidi Hydrochlor. dil.	gtt. xv.
Hydronaphthol.	gr. iij	Aq. destill.	ad ʒ iv.

M.

The addition of four drachms of glycerine increases the solubility of the papain.

Dr. Parman has obtained excellent results from keeping his patients in an atmosphere of **Sulphur** fumes. His plan is to place a large umbrella opened out at the head of the child's bed, and to put a sheet over this extending to the foot. He burns a teaspoonful of sulphur every hour. Dr. Osborne is convinced that it is not sulphurous acid which is demanded for the cure of diphtheria, but sulphur itself, and he appeals to the action of this agent in destroying the phylloxera as a proof of its powerful anti-microbic action. He has devised an instrument for the local application of sulphur. It consists of a tube of brass, with a bent spoon soldered on one end. The spoon is nickel-plated. It is to be used by passing it over the tongue, then pressing downwards and forwards. The powder can then be blown into the throat and on the tonsils by the mouth or any other insufflator.

Dr. G. E. Hubbard uses **Vleminck's Solution**, which is prepared as follows:—Take of lime, one part; sulphur, two parts; water, twenty parts. Slake the lime with some of the water, then add the remainder and the sulphur; boil to twelve parts, and filter. Under the use of this solution in spray, even sparingly applied, the diphtheritic patches undergo a change in a few hours; in some cases they disappear entirely in a day. If the false membrane has developed rapidly before the case is seen, the spray will be effectual even then in arresting systemic poisoning, and sooner or later the tough membrane will detach itself. The solution further prevents to some extent constitutional infection, as it is taken into the patient's stomach. Its stimulant, laxative, and somewhat diaphoretic and diuretic actions are quite marked.

M. D'Espine regards diphtheria as, in the first place, a local affection. He, along with M. de Marignac, has found that the development of Loeffler's bacillus of diphtheria is arrested by corrosive sublimate (1—8000), carbolic acid (2 per cent.), salicylic acid (1—2000), chloral (1—100), and permanganate of potash (1—2000).

Diphtheria being a local infection, all internal antiparasiticides, *e.g.*, mercury, should be avoided, as simply adding to the diphtheritic intoxication. All debilitating measures (chlorate of potash, antipyrine, apomorphine, &c.) should be rejected, tonics only being employed.

In children milk is the best internal medication. Local treatment ought to precede and accompany general treatment. Early diagnosis is essential, and a piece of supposed membrane should be detached, stained, and Loeffler's bacillus sought for. At first they exist almost as a pure culture. **Salicylic Acid** of strength of 1½ to 2 in a 1000 completely sterilizes the false membrane, and should be used in repeated irrigations, every one or two hours, either through the mouth or nasal fossæ. In young children, who may swallow much of the irrigation, this should be reduced in strength to 1—1000 to 1—1500.

In the first 24 hours, from one to two litres of the solution may be used. Fever falls, and the throat is improved often within three or four hours. When the membranes are very firm and thick, swabbings may be employed as well as irrigations. For this purpose **Citron Juice** may be employed, since it has a clear destructive action on the bacillus. Irrigations with salicylic acid should be employed as a prophylactic in all simple anginas occurring during a diphtheria epidemic. All scarlatinal anginas which are likely to be followed by necrotic pharyngitis and true diphtheria ought to be treated antiseptically.

Dr. Gustav Elwert, of Reutlingen, has found great benefit from the local application of **Calomel** in cases of diphtheria. His idea was that, if calomel could be brought into contact with the diphtheritic membrane, the chloride of sodium in the saliva would act upon the mercury salt and produce corrosive sublimate in minute quantities, which might, however, be sufficient to act as a bactericide to the virus in the membrane. His plan is to mix calomel with two or three times its weight of powdered starch, and to brush out the pharynx lightly with a feather dipped in this powder. This is done three or four times during the day and two or three times during the night. Cold-water compresses are applied to the throat, and a mixture containing **Nitrate of Sodium** is prescribed for internal administration. The effect of the treatment is soon apparent in the diminution of the membranous patches and of the foul odour, and, where the disease has invaded the larynx, in the decrease of the hoarseness of the voice.

Dr. Jacobi, writing on the treatment of diphtheria, says that prevention can do a great deal for the individual. Diphtheria will not as a rule attack a healthy surface, and the best preventive, therefore, is to keep the mucous membrane healthy. There is only one normal condition which admits the virus, namely, the interstices between the epithelium of the tonsils, hence the importance of the removal of enlarged tonsils, but this should be done at a time when diphtheria is not prevalent. Dr. Jacobi lays great stress on the necessity of watching

the conditions of the heart. Failure in its action is usually developed gradually; it is indicated by an increase in frequency and weakness of both heart-beats and pulse, by occasional intermittence, by irregularity, or by equalization of the interval between the systole and diastole, and diastole and systole. Heart failure may develop with or without warning even in mild cases. Cardiac stimulants are indicated and their administration ought not to be postponed until feebleness and collapse have set in. **Digitalis** or **Sulphate of Sparteine,** if rapid action be wanted, may be given. The dose of the latter is one-tenth grain four times daily as a matter of precaution, or every hour or two hours in an emergency, to an infant one year old.

Alcoholic stimulants ought to be given early and freely. A few ounces daily may suffice, but the author has often seen ten ounces daily of brandy or whiskey save children who had been doing badly with three or four. There is no danger of intoxication from them in such septic diseases as diphtheria; **Caffein, Camphor, Strychnine** or **Siberian Musk** may be given. Siberian musk in thin mucilage is the very best internal stimulant. Ten or fifteen grains ought to be given to a one- or two-year-old child within three or four hours; if this does not restore the heart's action, the prognosis is very bad.

Mercury is the most useful internal remedy. The smallest daily dose of the bichloride ever given by the author in the beginning was fifteen milligrammes (¼ grain) to a baby four months old. Half a grain daily may be given to children of from three to five years: the doses vary from one-sixtieth to one-thirtieth, freely diluted with milk or water. Dr. Jacobi has great faith in the efficacy of the bichloride of mercury in this disease.

Mr. R. W. Parker recommends the employment of **Hydrochloric Acid** diluted with three or four parts of **Glycerine** as an application to the affected part, or glycerine of carbolic acid may be used in the same way. Great care must be exercised not to abrade the diseased surfaces, and two or three applications usually suffice in as many days. Besides these local caustics he strongly believes in the use of weaker astringent applications frequently applied. These may be employed in the form of spray or by irrigation. In cases of severe nasal diphtheria he even counsels the administration of **Chloroform,** if needs be, in order to secure a thorough cleansing of the posterior nares and adjoining pharynx. After irrigation, or in place of it, **Iodoform** or **Boric Acid** may be blown into the nostrils or upon the pharynx. Hoyer paints the tonsils with a solution of 30 parts of **Gallic Acid,** 60 parts of **Distilled Water,** and 10 parts of **Glycerine**; a brush of fine bristles is employed and considerable pressure exercised against the

diphtheritic membrane. He carries out this procedure three times in succession, repeats it every six or eight hours, and continues the treatment until the membrane has disappeared. He prescribes also a gargle of 1 part of **Chlorine Water**, and 3 parts of **Distilled Water** to be used several times between the applications to the throat.

In contradistinction to the vigorous local treatment recommended by some physicians, Lorey uses simply insufflations of **Powdered Sugar.** He has treated eighty cases in this manner, and claims for sugar an anodyne and antiseptic effect. He supplements the treatment by vigorous tonic medication.

The treatment of nasal diphtheria is always a difficult matter, so that one is inclined to pay attention to Cholewa ("Thérap. Monat,") who reports most favourable results from the application of plugs of cotton wet with a 20 per cent. oily solution of **Menthol** to the nose in these cases. In cases in which syringing of the nose had been impossible on account of its being entirely filled with membrane, this method seemed rapidly to remove the membrane and to bring the diphtheritic process to a standstill.

REFERENCES.—Longstaff, "Supplement in continuation of the Report of the Medical Officer of the Local Government Board for 1887," (C.—5638,) 1889; Paget, "Pract.," June, 1889; Downes, *Ibid.*; "New York Med. Jour.," March 2, 1889, p. 239; Ranke, "Brit. Med. Jour.," Sept. 22, 1888; Hadden, "Lancet," Jan. 5, 1889; Caldwell, "Archives of Pediatrics," Feb., 1889; Pairman, "Jour. of Laryngology and Rhinology," Feb., 1889; Osborne, "Thérap. Gazette," May 15, 1889; Hubbard, "The New York Med. Rec.," vol. xxxiv, p. 703; D'Espine, "Rev. Med de la Suisse Rom.," Jan., 1889; "Lancet," March 16, 1889; Jacobi, "Brit. Med. Jour.," Sept. 22, 1888; Parker, *Ibid*; Hoyer, "Amer. Jour," Jan., 1889, p. 67; Lorey, "Wien. Med. Presse," No. 2, 1889.

Synopsis.—(Vol. 1888.) **Sodium Benzoate,** ℥ss to j (p. 22). Pyridin said to be a valuable palliative (p. 85).

(Vol. 1889, p. 230.) ℞ Ol. Terebinth, ʒj, Sp. Ætheris. ♏iv, M. Sig. ter. in die. and in addition 2% Sol. Sod. Salicyl., ℥ss sec. hor. using 1% warm solution Potass. Chlorat. as gargle and ice bag externally; ℞ Precipitated Sulphur (pure) ℥iss, Chocolate Powder. ʒj, Cinnamon-water (concentrated 1 in 40) fʒij, Glycerine to make ℥iij.

Mix the powders together in a mortar, then gradually add the glycerine, with constant trituration, and lastly the cinnamon-water. If kept in tightly corked, sealed, or stoppered bottles, this preparation will keep well for a very long time. It of course requires shaking before use. The mixture is remarkably palatable, and is readily taken both by children and adults. Each drachm contains about iij grains.

Sig. ½ to 1 teaspoonful to be taken every hour or oftener. The dose should vary according to the age of the patient. The mixture ought to be

continued for at least five days, but at less frequent intervals after the severity of the symptoms has abated.

Borax, xl centigrammes to j gramme for children under 1 year; j to jss grammes from 2 to 5 years; ij grammes from 5 to 10 years; and iij, iv, or v grammes for adults; **Hydrogen Peroxide** locally (aqueous solution); **Mercurial Fumigations** volatilizing grs. xl to lx under a canopy for 20 minutes, repeating this every 2 or 3 hours the first day; after **Tracheotomy** a cannula with **Iodoform Tampon**. **Concillana Bark** for diphtheria, grs. x to xl (p. 34).

DROPSY. (See also "Ascites," "Bright's Disease," "Heart," etc.)

Synopsis.—(Vol. 1888.) **Apocynum Cannabinum** in general anasarca, also in pleurisy with effusion, ♏j to x of Fl. Ext. (p. 16); **Arbutin**, diuretic in mitral disease (p. 17); **Caffeine** as diuretic (p. 28); **Chimaphila Umbellata**, Liq. Ext. ♏j to x, Tinct. ♏v to xx, in abdominal and renal dropsies (p. 38); **Cloudberry** (Rubus Chamæmorus), in œdema pedum (p. 39).

(Vol. 1889.) **Delphinium Staphisagria**, gr, $\frac{1}{60}$ hypodermically as diuretic (p. 37); also **Phyllanthus Niruri**, dose ʒij (p. 61); **Ulexine** (p. 71); **Orthosyphon Stamineus** in infusion (x grammes to j litre of water) said to be a harmless but powerful diuretic (p. 57).

DUODENAL ULCER. *F. de Havilland Hall, M.D.*

What are the symptoms of Duodenal Ulcer?

(1,) Sudden intestinal hæmorrhage in an apparently healthy person, with marked tendency to recurrence and anæmia. Hæmatemesis may precede or accompany the melæna, but the occurrence of melæna without hæmatemesis is very significant of ulceration of the duodenum.

(2,) Pain in the right hypochondriac region, coming on two or three hours after eating. In some cases food has no special influence on the pain.

(3,) The occurrence of agonizing attacks of colic; the hæmorrhage being more apt to occur about the times of these attacks.

(4,) Comparative absence of gastric symptoms in the intervals between taking food.

The treatment of duodenal ulcer should be conducted on the same lines as for gastric ulcer.

REFERENCES.—Osler, "Pract.," March, 1889; Woodward, "Therap. Gaz.," Jan. 15, 1889.

DYSENTERY. *F. de Havilland Hall, M.D.* / *Alexander Crombie, M.D.*

Dr. Ossovski places the patient on all fours, so as to relax as far as possible the abdominal pressure, and then slowly injects, by means of a long, soft gutta-percha tube passed up the rectum, a one-half per cent. solution, or rather emulsion, of **Creoline**, allowing this to remain as long as possible, *i.e.*, usually from five minutes to half an hour, but occasionally several hours. The injection was repeated twice, and sometimes three times, a day, and in the great majority of instances very soon produced a marked improvement in the patient's condition.

If, after the dysentery is arrested, a catarrhal condition remains, injections of **Acetate of Lead** and **Tannic Acid,** together with **Cinchona** and **Sulphate of Soda** may be required (HALL).

REFERENCE.—Ossovski, "Lancet," May 18th, 1889.

The value of **Perchloride of Mercury** in the treatment of hill diarrhœa, and in tropical diarrhœa, suggested to Surgeon-Major Moriarty its employment in dysentery with good results. He found, however, that a combination of the **Perchloride of Mercury** with **Cannabis Indica,** which has been recently often advocated, especially by Rennic, had the most excellent effect, it being not a rare experience to find a perfectly natural motion within forty-eight hours after beginning this treatment. The formula he employs is :—

℞ Liq. Hydrarg. Porchlor.	℥s	Mucilag. Tragacanth	℥j.
Tinct. Cannab. Indic.	♏ x		

To be taken from 4 to 8 times daily, according to the urgency of the symptoms (CROMBIE).

REFERENCE.—"Ind. Med. Gaz.," Mar., 1889.

Synopsis.—(Vol. 1888. p. 207.) **Naphthalin,** gr. j to v, 5 times daily, alone, or with **Emulsion of Castor Oil and Opium; Ipecacuanha; Cannabis Indica.** ℞ Tinct. Cannabis ♏xv; Bismuth Subcarb. gr. iv; Mucil. Gum Arab. ♏xxx. Mix and add Tinc. Zingib, Tinc. Cardamom Co., Sp. Chloroformi, āā ♏xx, Aq. Cinnamon ad. ℥j, Sig. After each meal, and kept up after symptoms cease. Dr. Stoner orders first, ℞ Sod. Bitart., Sod. et. Pot. Tart. āā ℥ss, M. Dissolve in half-glass water and give every 2 hours. When stools change, ℞ Bismuthi Subnit., Pulv. Ipecac. Co. āā gr. x. Sig. One every 3 or 4 hours. **Conessine,** alkaloid of Holarrhena Antidysenterica (p. 59).

(Vol. 1889, p. 233.) **Aconite** in small and frequent doses; **Tinct. Cannabis Indica** with **Tinct. Hyoscyami; Opiate Enemata** (with or without Ipecacuanha) after each motion; **Ipecacuanha** in small doses with **Dover's Powder** until feeling of nausea is produced; **Argent. Nitrate** in **Enemata,** each containing grs. x to ℥vj of water, repeating this if necessary. In chronic cases larger doses of the salt are required; **Persulphate of Iron** and also **Nitric Acid** have been used as injections; **Subnitrate of Bismuth,** ℥j or ij doses; **Hydrastin** or **Lead Acetate** have been suggested. **Geranium Maculatum,** grs. x to xl, and also as injection (p. 42).

DYSIDROSIS POMPHOLYX, or CHEIRO-POMPHOLYX.

W. Allan Jamieson, M.D.

A vesicular or bullous affection, commonly limited to the hands or feet. It is usually associated with excessive sweating, and is seen chiefly in weakly or neurotic persons. Tonics are therefore indicated, with change of air and open-air exercise. Locally, avoidance of soap, bathing with gruel, and the application of a dusting powder of :—

℞ Salicylic Acid	3·0	Oleate of Zinc	10·0
Talc	87·0		

Synopsis.—(Vol. 1889, p. 234.) *General Tonics.*—**Arsenic, Quinine, Strychnine,** and **Iron;** bathing with gruel; a dusting powder of **French**

Chalk and **Boracic Acid**, and internally R Potass. Acet., ʒiv, Tinct. Nuc. Vom., ʒj, Tinct. Cinchonæ ad ʒiv, Sig. a teaspoonful well diluted 3 times a day (Jamieson); **Zinc Oleate** or **Ung. Plumbi.** relieve tingling and tension (Crocker); Full doses of **Fowler's Solution** or **Arsenious Acid** given until all traces of vesicles disappear (Shoemaker).

DYSMENORRHŒA. *John W. Taylor, F.R.C.S.*

In the young is often dependent on *Anæmia*, and disappears with the cure of the latter. (See "Anæmia.")

When sudden or occasional only, and accompanied by some pyrexia, **Tinct. Aconiti** (♏j every hour), **Liq. Ammonii Acetatis** (½ ounce in four hours), **Tinct. Pulsatilla** (♏v in four hours), *mustard baths* and the *hot pack* are the best remedies. Sometimes an anodyne is necessary. Then **Opium** or **Chloral**, or both combined, may be personally administered by the surgeon.

When the history of this symptom is of long duration the *time* of its appearance and the *seat* of the pain are aids to diagnosis of the cause.

When the pain occurs some time before the flow, and is mainly abdomino-lateral, the cause is probably ovarian. The ovary may often be felt—large, tender, and low.

When the pain immediately precedes the flow, and accompanies its onset, the cause may be tubal. The tube may perhaps be felt distended, adherent to the uterus, and generally behind it.

When the pain occurs only *with* the flow, is spasmodic and felt in the back, as well as above the pubes, and when nothing abnormal can be detected on bi-manual examination either around the uterus or interfering with its mobility, the cause is probably uterine.

In *Ovarian Dysmenorrhœa* when the flow is scanty, and functional development is delayed, **Iodide of Potassium**, in increasing doses, **Nux Vomica, Quinine** and **Iron**, are indicated. Intra-uterine faradization is also useful.

When the flow is sufficient or profuse, **Bromides, Ext. Hydrastis Canad.** Liq. (♏xv to xx), **Ext. Salic. Nigr.** Liq. (♏xv to xx), **Tinct. Cannab. Ind.** (♏v every hour for seven or eight doses) and hot injections are serviceable.

A *Belladonna* suppository (gr. ¼ to ij of extract) will sometimes greatly relieve the pain. Dr. Farlow recommends the rectal use of **Belladonna** and **Cannabis Indica** (¼ gr. of each extract in suppository) beginning a few days before the menstrual symptoms appear. The suppository may be used every night, or every night and morning.

In *Tubal Dysmenorrhœa* absolute *rest* is essential, and the *operation for removal* may possibly be required.

In *Uterine Dysmenorrhœa* the following remedies are best: **Ext. Viburn. Prunif.** Liq. ½ drachm every four hours, **Ext. Ergot** Liq.

mv to x, **Tinct. Actææ Racemosæ,** mx to xx (when there is rheumatic history), **Potassi Iodidi,** grs. v to xv, **Liq. Strychniæ** (miij to v), and **Tinct. Caulophylli** (mv to xx). **Antipyrin** (gr. iij to v), is useful in menstrual colic. Its use "per anum" has been recommended (grs. xxx during period and occasionally repeated in twelve hours). Antipyrin is said by some to be contra-indicated during menstruation. One dose of xv grs. in dysmenorrhœa is said to have caused dangerous symptoms, arrest of flow, rigor and fainting. Large doses should be avoided or used with caution.

But something more than the administration of medicine is often needed.

In *Uterine Dysmenorrhœa*, whether any true stenosis of the internal os exist or not, some difficulty is frequently found in guiding the sound beyond the internal os, the uterus being small and anteflexed or "Infantile." In these cases most benefit is to be obtained by:—

(1,) *Dilatation of the cervix:* (*a*,) By graduated sounds; and (*b*,) By forcible dilators under anæsthesia; (2,) *Division of the cervix;* and (3,) *Galvanism.*

Dr. More Madden advocates treble division by metrotome, forcible dilatation with special dilator, introduction of finger into uterus, a tampon left within the uterus, and, after ten days' interval, the use of a stem pessary to be worn for a month.

There are cases unbenefited by single dilatation or dilatation under anæsthesia (as described in the "Annual" for 1887), that will respond to the measures advocated by Dr. Madden.

His directions are as follows: "In performing the operation, which is preceded by daily hot water syringing for some time—the time about a week after the last painful period is selected—the patient is anæsthetised, and placed in the left semi-prone position on a gynæcological table. The cervix being exposed by the duck-bill speculum, the anterior lip is seized by a strong vulsellum, and drawn down as close to the vulva as possible. The sound is next passed to ascertain the position of the uterus and the permeability of the canal. A metrotome is then introduced into the uterine cavity, and being expanded to such an extent as may be thought necessary, is withdrawn, so as to incise the cervix freely from end to end. The instrument is again introduced, and the cervix divided antero-posteriorly. The uterine cavity is then washed out with hot water to arrest hæmorrhage and remove clots, and the dilator introduced. This instrument is opened and allowed to remain for a few moments, and is then withdrawn in an expanded condition, so as to tear asunder and expand the cut surfaces till the index finger can be introduced into the uterine cavity. The

uterus is again washed out with warm water, and a tampon of cotton saturated in glycerine and carbolic acid is introduced, and left *in situ* for some days, so as to fill and distend the passage. After the operation the patient is kept in bed, and the vagina syringed daily with hot water for eight or ten days, pain being treated with opiates and poultices. After this period a flexible tube or uterine stem pessary is introduced, which should be worn for another month, when the patient may resume marital life with a fair prospect of subsequent impregnation, and an almost certain immunity from any recurrence of dysmenorrhœa."

When the uterus is quite infantile and the possibility of a curative pregnancy is out of the question, the proper treatment may be by removal of the appendages. This, however, should be reserved for cases of malformation or imperfect development only.

Some cases of absence of the uterus suffer from severe "dysmenorrhœal" pains, although there is, of course, no menstrual discharge. If the pain be sufficiently serious, incapacitating for work, these are fit cases for the operation of removal of the uterine appendages.

REFERENCES.—Farlow, "Boston Med. & Surg. Jour.," May 23, 1889, and "Therap. Gaz.," July 15, 1889; Windelshmid, "Med. Chr.," January, 1889; Huchard, "Phil. Med. News," No. viii., 1889, and in "Pract.," May, 1889; More Madden, "Dublin Jour. of Med. Sci.," April, 1888.

Synopsis.—(Vol. 1888.) *In Uterine Dysmenorrhœa*, Aletris, Tinct. ♏v to x (p. 10); Guaiacum, Ammoniated Tincture, ʒss to ʒj every 2 hours, to relieve pain (p. 55); Hydrastis in congestive and obstructive dysmenorrhœa (p. 60); Oxalic Acid extolled as emmenagogue (p. 81).

DYSPEPSIA. *F. de Havilland Hall, M.D.*

What is the condition of the secretion of the stomach in the dyspepsia of infants?—Leo's investigations show that not seldom an abnormally high percentage of hydrochloric acid is present, and pepsin or pepsinogen is found in the majority of cases. From these experiments it follows that, in the dyspepsia of children, hydrochloric acid is either without effect or acts injuriously, and that the administration of pepsin is unsuitable. On the other hand, washing out the stomach is a handy method, unattended with danger. Water, or water with a few drops of a 20 per cent. alcoholic solution of **Thymol** may be employed. Diluted milk or milk gruel in small quantities is the best diet.

Baginski agrees with Leo as to the favourable results obtained from washing out, but it is to be avoided when the peritoneum is affected, and in cholera infantum, when collapse threatens. It is a sovereign

remedy in habitual vomiting after weaning, in atonic states of the intestine, as in rickets, and also in many cases of chronic dyspepsia.

Is there any harm in the practice of habitually using antacids for the relief of Acid Dyspepsia?—Sir William Roberts answers this question in the negative, and he is satisfied that, with due precautions, the practice is harmless. For the purpose in question he mostly employs the **Bismuth Lozenges**, B.P., and lays down the following rules for their use. They are not to be used at or near meal times—not sooner than three quarters of an hour after breakfast, nor sooner than an hour or an hour and a half after dinner ; they are not to be used regularly and systematically, but only as the occasion arises, that is to say, when gastric pain is distinctly present and is producing more discomfort than a man could be reasonably expected to bear who had the easy means of relief ready to his hands ; lastly, the use of the lozenge is to be discontinued if their employment does not cut short the pain. If an effective antacid fails to give relief, it is sure evidence that the pains are not due to gastric acidity.

Creasote has long been a recognized remedy in cases of dyspepsia ; the following formulæ, recommended by Dr. Eloy, are convenient methods of its administration :—

℞ Pure Creasote	gtt. 10	Pulv. Gum Arabic	q.s.
Bicarb. of Sodium	gr. 120	Water	℥v

A coffee-spoonful to be given one hour after each meal.

℞ Pepsini	gr. 60	Carb. of Bismuth	gr. 60
Creasote	gtt. 10		

This is to be divided into thirty packages, of which one may be given in a gelatine capsule.

Papain.—Dr. Grineritshi recommends the employment of papain in dyspeptic conditions, accompanied by acid eructations and pain. Ten to 15 centigrammes of papain (Finkler) mixed with 25 to 30 centigrammes of sugar of milk are given in a mixture containing **Bicarbonate of Sodium, Carbonate of Ammonium, Carbolic Acid** and **Glycerine,** an hour or two after food.

Glycerine in drachm doses has been found of use in dyspepsia, and it has been employed in the treatment of the summer diarrhœa of children. Given as an *injection* in 2-drachm doses, Dr. George Rice has obtained excellent results in the diarrhœa and prolapse of the rectum in children. In some cases a single injection sufficed to check the diarrhœa, but usually two or three injections are required.

References.—"Therap. Gaz.," Feb. 15, 1889 ; Roberts, "Brit. Med. Jour.," Aug. 17, 1889 ; Eloy, "Gaz. Hebd. de Méd. et de Chir.," May 31, 1889 ; "Therap. Gaz.," July 15, 1889 ; Rice, "Pract.," Dec., 1888, p. 418.

Synopsis.—(Vol. 1889, p. 236.) **Sulphate** and **Carbonate of Magnesia**; **Sulphate, Tartrate,** and **Carbonate of Soda**; **Aloes, Rhubarb,** etc. are used to relieve congestion, having exosmotic action. The **Carbonates of Ammonia, Soda,** and **Potash**; the **Nitrates** and **Iodides of Potash** and **Soda** act as endosmotics, both classes being indicated to unload bloodvessels of alimentary tract, and to relieve pain ♏ij or iij of **Morphine Solution** or **Chlorodyne** may be added (Illingworth). In cases are more chronic, carminatives, *e.g.*, **Cardamoms, Ginger,** and **Capsicum** are required; also **Nux Vomica** and **Belladonna** as stimulants; ℞ Ammon. Carb., ℥ss to j, Magnes. Sulph., ℥iij to vj, Tinct. Belladonn., ℥j, Tinct. Nuc. Vom., ℥j, Sp. Ætheris Chlor., ℥ij, Tinct. Zingib., ℥ij, Aq. Menth. Pip. ad ℥vj, M. Ft. Mist. Sig. Capiat æger semiunciam quart. horis. If after these remedies a debilitated state remains **Acid** and **Nux Vomica** are useful if given after meals. If elderly people complain that "food lies like lead" on the stomach, **Acids** are required. In flatulent colic, due to congestion of large venous tracts, the endosmotics are indicated, *e.g.*, ℞ Sp. Ammon. Aromat., Liq. Ammon. Acet. āā ℥iij, Sp. Æther Chlor., ℥ij, Tinct. Zingib., ℥ij, Tinct. Belladonn., ℥j, Aq. Menth. Pip. ad ℥vj, Ft. Mist. Sig. ℥j omni quadrante horæ vel pro re nata. If **Antipyrin** be used as endosmotic the effect is better kept up by the addition of a mixture of **Belladonna** and **Ammonia.** If the tongue is very foul and constipation present add the **Sulphate** or **Carbonate of Ammonia.** If gall-bladder is affected with spasm, a **Calomel** and **Opium Pill** is curative. In atonic dyspepsia with sluggish portal circulation and constipation, especially when there is a tendency to biliary or urinary calculi, **Tinct. Berberis,** ♏v to x is useful (p. 23). In acute and chronic gastric catarrh and dyspepsia, **Kava-Kava,** grs. 1½ t.d. is valuable (p. 50).

EAR (Diseases of). *J. Dundas Grant, M.D.*

Foreign Bodies in the External Meatus, (see "Medical Annual," 1887 and 1888).—Barclay gives a number of cases illustrating important principles in connection with the presence of foreign bodies in the meatus. Thus, in cases of the entrance of live insects, if the animal is very small, it may sometimes be ejected by forcibly blowing into the canal. If the invaded ear is upturned and filled with warm water, the insect will either at once seek the surface or perish from want of air. In the latter case it may subsequently be removed by syringing, which is the preferable method, or with a cotton-wool brush or curette. Probing the ear for the removal of a live insect should be avoided, as apt to lead to abrasion of the canal and drum-head at least, and very often to complete rupture of the latter. So insignificant a foreign body as small clipping of hair in the *cul-de-sac* of the canal, produced in one of his cases aural and cerebral symptoms (spasmodic pain, vertigo, headache, and, at times, tinnitus,) which soon disappeared after the removal of the offending body by means of a cotton-wool brush; hence the importance of an examination of the ear when such symptoms are present.

In cases of perforated or lost drum-head (to be suspected if otorrhœa

has formerly existed), a foreign body is a dangerous complication, if neglected, calling for the greatest circumspection in the use of the syringe by which it is apt to be driven into the upper chamber of the tympanum, or into the mastoid antrum. It is in such cases that the use of a bent curette, *under satisfactory illumination*, is to be preferred for the purpose of removing the foreign body to a point where it can more readily be seized and extracted by means of forceps. A case of suspected foreign body in the ear is the text for the reiteration of the wise rule: *No matter how positive a patient his relatives or friends may be that there is a foreign body in his ear, never attempt the removal of such until you have first provided yourself with satisfactory illumination of the canal with a mirror; examine the ear thoroughly by ocular inspection, and convince yourself of the presence of a foreign body.*

Another case shows how harmlessly a foreign body may remain in the meatus provided it is not interfered with. (The remarkable tendency to spontaneous extrusion of foreign bodies on the subsidence of consequent inflammatory conditions has been frequently noted by observers.)

The advisability, nay, the indispensability of anæsthetics for restless patients is dwelt on by the writer.

Bezold ascribes great significance to the state of the hearing-power in cases of the presence of foreign bodies in the tympanum. Thus, if a very high degree of dulness of hearing or deafness indicates a recent injury of the foot-plate of the stapes, there is a vital indication for the extraction of the body by means of removal of the posterior wall of the osseous canal—supposing removal by the ordinary methods to have failed. The reason for such comparatively severe measures is that there is enormous risk of the extension of the inevitable middle suppuration through the opening in the fenestra ovalis to the labyrinth, internal auditory meatus and meninges.

If the presence of the foreign body lead to suppuration in the neighbouring parts, especially the mastoid process, he deprecates trusting to methods involving delay (cold, depletion, etc.,) and urges the immediate opening of the antrum. This may be combined with the chiselling away of the posterior wall of the bony canal.

Aural Reflexes caused by the accumulation of Cerumen in the External Meatus.—Herzog, inspired by Walter Downie's remarks on this subject, was led to examine the ears of a lady, who, without the slightest defect of hearing or *tinnitus aurium*, suffered from a feeling of constriction in the head and neck, as if the head were held in a vice, with inability to think and with

frequent vertigo, especially on rapid movement of the head, feeling of distress, palpitation, etc., without evidence of disease of internal organs. He found the left auditory meatus completely blocked by a mass of cerumen, on the removal of which the symptoms entirely disappeared. The course of events is explained by the irritation of the auricular branch of the vagus distributed to the auditory meatus. (Compare Jakins's case of cough, simulating phthisis produced by cerumen in the meatus, "Med. Annual," 1887.)

Furuncle of the External Auditory Meatus (see "Med. Annual," 1887).—Chalewa advises the application of 20 per cent. solution of **Menthol** in oil on cotton-wool. This is left for twenty-four hours and then renewed. Incision should, he says, not be practised before the formation of an abscess. This treatment is founded on the inhibitory action of menthol on the development of the *staphylo-coccus aureus*, which, as already shown by Loewenberg, is the chief infecting agent in this affection. Loewenberg recommends a supersaturated solution of **Boric Acid** in **Alcohol** ("Med. Annual," 1888). (The use of **Cocain** as a palliative has been before recommended in the "Annual.")

Myringoplasty.—Berthold, after many experiments, has arrived at the following method of closing old perforations: After complete stoppage of the discharge, the aperture in the membrane is covered with egg-shell membrane. Next day this is gently dabbed with a small cotton-wool tampon impregnated with **Oil of Turpentine.** In a few days the opening is said to get smaller and close.

Artificial Membranes.—Katz applies to the perforation a small piece of a thin sheet of celloidin (precipitated from an etherial solution). This is placed *in situ* by means of a small twist of cotton wool stiffened with celloidin. **Antiseptic Cotton-wool** is the most generally applicable material for artificial membranes; and Dr. Ward Cousins has devised a modification of the simple plug which reaches the whole length of the meatus, and may prove very useful to patients who are unable to acquire the art of applying the simple forms for themselves.

Fistulous Openings in the upper part of the Tympanic Membrane.—These may arise from middle-ear disease, but Walb concludes from observations extending over many years, that in the great majority of cases they arise from disease of the external ear, either through implication of the margin of the membrana flaccida in a circumscribed or diffuse external otitis, or through infection from external otitis reaching the space beyond the membrana flaccida by means of a pre-existing opening in that membrane. As a further etiological factor, he adduces the occurrence of a tubercular focus as represented by

the carious process so frequently found in the upper wall of the meatus.

As regards treatment, surgical interference is necessary in the form of removal of granulations, free exposure, and scraping of the diseased portion of bone, the clearing of inspissated exudation, and methodical antiseptic cleansing of the cavity by means of a minute cannula passed into its interior. Injections through the Eustachian tubes are seldom of any benefit, as the cavity in question does not necessarily communicate with the tympanum. Should the treatment recommended not lead to a cure, Walb considers myringectomy as indicated. (The chronicity of such cases is well-known, and their recognition as well as the mode of combatting them are worthy of careful consideration.)

Carbolic Acid Glycerine in Hyperæmia of the Tympanum.—In cases in which there was pain, with signs of hyperæmia of the middle ear, the instillation every two hours of a 10 per cent. solution of **Carbolic Acid** in **Glycerine** was found by Morpurgo to be followed by relief and prevention of suppuration. Méniere and Delstanche recommend the use in some cases of even so strong a solution as equal parts of carbolic acid and glycerine.

The Treatment of Aural Exostoses.—Mr. G. Field advises "to operate whilst there is room left to guide the drill" (he uses a drill worked by an ordinary dental foot-engine); and quotes the alarming case of a patient who, rejecting the advice to have an operation performed, was carried off by a cerebral abscess resulting from the neglected ear before Mr. Field had time "to complete a journey from the country to London when summoned by telegraph to see him." (The consideration of such a case ought not to bias the reader too much in favour of early operation in every instance of aural exostosis, but there cannot be the slightest doubt that a patient who is the subject of aural exostosis should submit himself to frequent examination in order that the occurrence of increased growth in the tumour, or the supervention of complications of even vital seriousness may be at once detected.—ED.) The conclusions he has arrived at are summarised as follows: "That aural exostoses can be easily removed with the drill; that in cases of multiple exostoses it is well to remove the apices of two or more exostoses in one meatus or the operation may have to be repeated; that they must not be considered as at all necessarily the outcome of gout, rheumatism, or syphilis; that in some cases multiple exostoses become wedged together so that increase at the extremities is arrested, and a triangular central space is left large enough to afford a free passage for sound, rendering operative

measures unjustifiable (this would exclude a large proportion of cases of exostoses from the list of those in which operation is justifiable.—Ed.) On the other hand, their speedy removal was indicated wherever they hindered the elimination of discharge; caused much pain by pressure or prevented audition. (Of these conditions the obstruction to the outflow of pus is by far the most important. A striking example of it is offered by the case of an eminent surgeon, who died within a very short time of diffuse meningitis in consequence of acute suppurative catarrh of the middle ear, the pus from which was prevented from escaping freely owing to the presence of exostoses in the external meatus.—Ed.)

Sir W. Dalby gives as his opinion that they should only be removed when they interfere with the free egress of discharge, or by completely closing the canal interfere with the passage of sonorous vibrations. He dwells upon the now well-known fact, that an extremely small aperture is sufficient for purposes of audition, and points out that the removal of little accumulations of wax by means of a small hook (rather than by syringing) about once a year may be all that is required, as in the large number of cases where the exostoses remain for years without perceptible increase. The patients have to be cautioned against putting the head under water or letting water into the meatus in any way. Dalby prefers the electric drill, as capable of such rapidity of revolution that very little pressure is required, and the heat produced is sufficient to coagulate the blood effused, and thus account for the slight degree of the accompanying hæmorrhage.

In cases where the exostosis is very difficult to reach, Mr. Sheild recommends displacing the pinna with the cartilaginous portion of the meatus in its lower and posterior part. The lining membrane of the meatus may be stripped off and the growth reached (in favourable cases) almost under the periosteum (the necessity for this displacement must be exceedingly rare).

The advantages of a non-operative plan of treatment are dwelt on by Dr. Barr. He points out the fact, which ought to be well before the mind of everyone treating these cases, that the circumstance leading to the occurrence of deafness is often merely an inflammatory swelling of the tissues over the exostoses, and which may be reduced by rational antiphlogistic treatment with the restoration of sufficient space for hearing purposes.

(On the whole, although the operation is a compartively safe one, it is not always followed by absolutely satisfactory results, and should not be lightly undertaken. At the same time the presence of exostoses adds greatly to the risks of suppuration in the middle ear, the occurrence of

which may demand removal of the growths without delay, the alternative being the opening of the mastoid antrum. The benefit derived from mild local measures, such as the insertion of small plugs of **Cotton Wool** saturated with a weak solution of **Acetate of Lead**, the removal of small pieces of cerumen, etc., is astonishing in most cases, and generally sufficient if the patient can remain under observation. On the other hand, should circumstances lead him to reside beyond the reach of the necessary skilled aid, the removal of the exostoses would become a justifiable proceeding. ED.)

Sir Dyce Duckworth on the Remote Effects of Suppurative Otitis.—In a clinical lecture on this subject, Sir Dyce Duckworth narrates several illustrative cases. In one with typhoid symptoms, there were pyæmic and gangrenous pulmonary abscesses; in another, thrombosis of the lateral sinus and embolic abscesses in the lungs; in a third, septicæmia with pleural, pericardial and peritoneal inflammation; in a fourth, epileptiform convulsions and vomiting; and in a fifth, septic thrombosis of the lateral sinus, pulmonary abscess, pleural effusion and double empyema. All were proved to originate from suppurative otitis and the first, second and fifth ended fatally.

In any obsure cases of septicæmia he insists that the ears should be examined and the meatus smelt. "No more forget to do this than you would neglect to look for hernia in any given case of obstruction of the bowels, and you will not unfrequently find the clue to your difficulties."

The moral of this lecture, however, is *early detection of the cause and site of the ear mischief.*

Disease of Mastoid Process.—Ferrer ascribes the occurrence of mastoid suppuration in a case which came under his care, to previous injudicious *packing of the meatus with powdered boracic Acid* for acute suppuration of the middle ear without syringing.

(In chronic cases where the perforation is very large, the use of powdered **Boracic Acid** by insufflation is unobjectionable, but when the perforation is small or the case acute, it is safer to use a saturated solution of **Boracic Acid.** ED.)

Duplay points out the *inconstancy of the position of the lateral sinus* and the *outward deviation of the middle cerebral fossa* as most frequent in cases where the mastoid process is very hard and small. He recommends that the incision should be as close as possible to the attachment of the auricle (as now generally practised.—ED.) and that gouging should not be pushed to a greater depth than one centimetre (rather more than three-eighths of an inch).

Measurement in relation to the Mastoid Process.—Certain measure-

ments taken by Noltenius from twenty-two skulls, demonstrate the relation of the *spina supra meatum* and the parts liable to be opened in trepanation of the mastoid, especially the Fallopian aqueduct and the adjacent semicircular canal. The "point for opening" the mastoid is taken to be situated 1 centim. behind the *spina*.

The measurements are as follows:—

(1,) From the *spina* to the Fallopian aqueduct, max., 18 mm., min. 11 mm., average 15·5 mm.

(2,) From the *spina* to the semicircular canal, max. 20 mm., min. 13 mm., average 16·5 mm.

(3,) From "point for opening" to the Fallopian aqueduct, max. 25 mm., min. 18 mm., average 22 mm.

(4,) From the "point for opening" to the semicircular canal, max. 25 mm., min. 17 mm., average 22 mm.

From these it appears that there is a possibility of injuring important structures at a depth of less than 20 mm.

Otalgia Nervosa.—Gruber gave relief in eight out of ten cases by administering **Antipyrin.** One gramme (15 grains) was taken at once, and if after two hours the pain was still present, another half gramme. (The practitioner in diagnosing this condition will have to eliminate the other common causes of earache—acute catarrh of the tympanum and furuncle of the meatus. Having done so, he has to bear in mind the diseases of the throat and mouth, tonsillitis, cancer or tubercle of the larynx, cancer of the tongue, etc., which are frequently accompanied by pain shooting up to the ear. In very many cases of otalgia the *fons et origo* will be found in the teeth, attention to which will alone bring about a curative result.—ED.)

REFERENCES.—Barclay, "New York Med. Jour.," July 13, 1889; "Berl. Klin. Woch.," No. 26 und 27, 1888; Herzog, "Monat. für Ohren.," No. 5, 1889; Walker Downies, "Lancet," June 16, 1888; "Med. Annual," 1888; Chalewa, "Therap. Monat.," No. 6, 1889; Berthold, "Monat. für Ohren.," No. 9, 1889; Katz, "Deut. Med. Woch.," No. 28, 1889; Walb, "Arch. für Ohren.," Band 26, xvi.; Morpurgo, "Amer. Jour.," Jan., p. '89; Field, "Brit. Med. Jour.," Aug. 24, 1889; Dalby, "Brit. Med. Jour.," Sept. 29, 1889; Sheild, "Brit. Med. Jour.," Sept. 28, 1889; Barr, "Brit. Med. Jour.," Sept. 28, 1889; Ferrer, "Arch. of Otology," vol. xviii., No. 1, p. 30; Duplay, "Arch. Génér. de Medci," May and June, 1888; "Annal. des Mal. des Oreidles," 1889, 1; Noltenius, "Monat. fur Ohrenh," 1889, No. 6; Gruber, "Monat. fur Ohrenh." 1889, p. 48.

Synopsis.—(Vol. 1888, p. 223.) Injection of **Tinct. Iodi.** ℥j to Aq. ℥ij, for *sebaceous cysts*, evacuated again after remaining in about five minutes; **Glycerine.**

℥j to Aq. ℥ij, (if ceruminal plug should block meatus), should be used before syringing; Solutions of **Morphia** and **Lead**, if meatus is inflamed, and insufflate finely powdered **Boracic Acid**, when pain has ceased; Solution of **Morphia**, gr. ij to ℥j, or **Atropine**, gr. j to ℥j, in acute inflammation of tympanum; Nasal injections are useful in *nasal catarrh accompanying catarrh of the middle ear, e. g.*, **Common Salt** or **Sodæ Bicarb.** of either of these as much as will lie on a shilling (piled up), added to a wine-glassful of warm water; also, ℞ Pulv. Ammon. Chlor. ℥ss; Pulv. Sacch. Alb. ℥ij, M.; ℞ Pulv. Pot. Chlorat. ℥ss; Pulv. Sacch. Alb. ℥ij; M. ℞ Glycerini Boracis; ℞ Glycerini Ac. Tannici. ℥iij; Aq. ad ℥iij, M. Sig. A teaspoonful of any of these to a wine-glassful of warm water; Gargles of **Potass. Chlor. Tannin, Alum**, etc., are useful adjuncts to nasal washes replacing them if mucous membrane of middle ear is very susceptible to inflammation. Paints, *e. g.*, **Glyc. Ac. Tannici.**; **Perchloride of Iron** and **Glycerine** (Liq. Ferr. Perchlor. and Glycerine, equal parts), and solutions of **Nitrate of Silver**, gr. xv to xxx to ℥j, especially if the patient cannot gargle. To treat the Eustachian tube and tympanic cavity, a few drops of a warm solution of **Sodæ Bicarb., Chloride of Ammonium**, or **Iodide of Potassium** may be introduced through the Eustachian catheter, or Vapours may be introduced by Valsalva's or Politzer's methods or by the catheter, *e. g.*, Fumes of Chloride of Ammonium; **Iodine and Ether Vapours**, in very chronic cases, are introduced by Valsalva's method, Tinct. Iodi. ♏xxx and Ether, ♏x, in an earthenware inhaler, with half-a-pint of hot water. N.B.—Not to be drawn into lungs. Warm vapours containing **Tinct. Benzoin. Co.**; **Pine Oil**, etc. *Chronic Otorrhœa*, warm injection, *e. g.*, ℞ Zinci. Sulph. ℥j; Glycerini. Ac. Carbolici, ℥ss; Aq. ℥x; M. ℥ss to a wineglassful of warm water; ℞ Sol. (saturated), Ac. Boracic, ℥ij, used with enough hot water to make it pleasantly warm; ℞ Boroglyceride (Barff's), ℥j in a wineglassful of warm water; ℞ Glycerini Ac. Carbol. ℥ss; Spt. Vin. Rect. ℥x; M. ℥ss in a wineglassful of warm water, to subdue suppuration in catarrh of tympanum. Instillations. ℞ Liq. Plumb. Sub-acet., used with an equal quantity of warm water; ℞ Sol. Argent. Nit., gr. x to xx to ℥j; ℞ Alcohol (Sp. Vin. Rect.), used with warm water (j part spirit to iij water), increasing alcohol until used pure; ℞ Pulv. Ac. Borac. ℥jss; Sp. Vin. Rect. ℥iij, M use as in the previous case. *Dry Treatment.* Pulv. Cretæ; Pulv. Ac. Tannici.; or Pulv. Ac. Borac. are used after syringing. **Nitrate of Silver, Chromic Acid** or **Ferri. Perchlor.** for granulations and polypi cauterizing. *Meniere's Disease.* **Bromide of Ammonium** or **Hydrobromic Acid**; **Quinine**, large doses; sometimes **Salicine** or **Salicylate of Soda.**

(Vol. 1889. p. 239.) For furuncles of external meatus application of **Cocaine** 10% solution in absolute alcohol, also solution of **Boracic Acid** in alcohol. To mature furuncles and prevent recurrence **Calcium Sulphide**, gr. ⅛ in pill thrice daily. For chronic purulent inflammation of middle ear, levigated **Boracic Acid** sterilized (by heating on platinum foil if used alone), or mixed with a tenth part of **Iodol.** If perforations are very small a solution of **Boroglyceride, Carbolic Acid**, or **Peroxide of Hydrogen**; Inflamed bone should be treated with dilute **Nitric** or **Carbolic Acid.** If discharge is thin and easily absorbed, plug with cotton wool antiseptic ised with **Corrosive Sublimate** after syringing and inflating. For covering chronic perforation **Photoxylin** used after washing out with **Boric Acid** solution. For nerve deafness due to labyrinthine disease, **Pilocarpine**, gr. $\frac{1}{12}$ gradually increased to gr. ⅓ hypodermically. For catarrhal deafness, **Calcium Sulphide**, gr. $\frac{1}{100}$ to ½ (p. 28).

EBSTEIN CURE. (See "Dietetic Cures.")

ECLAMPSIA. *Charles L. Dana, M.D., New York.*

Caffein Citrate in Puerperal Eclampsia.—Mr. Bolton Corney, of Fiji, cites a case of puerperal eclampsia in a woman not suffering from albuminuria or uræmia. The continued fits were stopped by large doses of **Bromide** and **Chloral**, and then the resulting stupor and adymania were relieved by caffein. We see in this case no evidence that the caffein was of value in relieving the eclampsia, but only in combating the depression. ("Practitioner," Feb., 1889.)

ECZEMA. *W. Allan Jamieson, M.D.*

If there have been no brilliant additions to the treatment of eczema during the year, some important suggestions have been made. Dr. Brocq has drawn attention to the consequences which, in some instances, may follow the suppression of a chronic eczema. At one time many medical men used to allow an eczema to pursue its own course, partly from a conviction that in causing its too rapid disappearance visceral complications might arise, but chiefly because they did not know how successfully to treat it. Under the influence of Hebra's teaching, a contrary view has been maintained that we ought always, and in all cases, to treat eczematous eruptions, and that no harm can accrue to the patient from our efforts to cause their disappearance. Brocq thinks that while this latter doctrine is applicable to the immense majority of cases, it is not always and absolutely true. There are circumstances, rare, it is true, in which the old ideas are correct, and in which the disappearance of an eczema may be followed by visceral troubles of the gravest nature. He cites some typical examples, and formulates his warning as follows: When we have to deal with people of inveterate arthritic habit, those who are rheumatic, emphysematous, asthmatic, subject to attacks of bronchitis, of melancholy, or to Bright's disease, we must never treat the cutaneous manifestations except with the greatest prudence, and must stop the treatment the moment that the slightest disturbance, having anything of a serious nature, occurs in the viscera. By conforming to these precepts one can, by means of appropriate internal treatment, gradually ameliorate the condition of the patient. If the eczema, in such circumstances, is not of a very troublesome character, it is most prudent to watch it, to soothe it from time to time, but not to force its disappearance. When the visceral disturbances have followed the disappearance of an eczema, we should endeavour to reproduce it by revulsives, and should it return and the internal troubles cease, it will be advisable to deal carefully with it in the future. ("Brit. Journ. of Derm.," Feb., 1889).

Lanolin continues to hold its own as an excipient for ointments in eczema, but its stickiness is a drawback, and Helbing has suggested the following formula as a base :—

℞	Anhydrous Lanolin	65·0	Ceresin	5·0
	Liquid Paraffin	30·0		

Melt together and then beat or knead in Water 30·0

This, which he calls Unguentum Lanolini, is applicable as a substitute for lard, as it is not irritating and cannot become rancid. ("Chemist and Druggist," April 27th, 1889.)

In acute eczema Dr. Mackintosh ("Pract.," July, 1889), recommends :—

℞	Bismuthi Subnit.	ʒiv	Acid Carbolic Liq.	ʒss
	Zinci Oxidi	ʒj	Vaselini Albi	ʒij

Mix.

℞	Bismuthi Subnit.	ʒij	Acid Carbol. Liq.	♏xx
	Zinci Oxidi	ʒss	Vaselini Albi	ʒvj
	Glycerini (Price)	ʒss		

Mix.

In those obstinate cases of eczema which occur so frequently in children during the second half of the first year of their lives, and affect particularly the face and extensor aspects of the extremities, should simple means such as Lassar's paste not cure, Boeck recommends compresses of a weak solution of **Nitrate of Silver** 1 to 500, alternating with an ointment. The compresses of the nitrate are usually applied covered with gutta-percha paper for two or three hours night and morning, and a soothing ointment during the rest of the day and at night. The **Unguentum Vaselini Plumbicum** suits very well. This treatment can also be used with advantage in the moist eczema of adults. ("Viertelj. Derm. und Syph," 1888).

In Eczema of Anus and Genitals Lustgarten ("Le Progrès Méd.,") advises hot sitz baths, rendered very soapy, and, subsequently, the application of the following pomade :—

℞	Oleate of Cocaine	1 part	Lanolin	10 parts
	Olive Oil	2 parts		

Mix.

Apply twice daily to affected parts.

("Med. News," Oct. 20th, p. 447.)

Treatment of Eczema in Children.—According to Besnier ("La Pratique Médicale," Oct. 2nd, 1888), eczema of the face in children may be recognized in three different forms. The first is met with in lymphatic or scrofulo-tubercular subjects, is but slightly pruriginous, develops around the orifices of the nose and mouth, and often causes glandular complications, which may be the starting-point of tubercular lesions. Its secretion is very abundant, and is frequently accompanied by phlyctenular keratitis.

The second form of eczema covers the entire face like a mask, and

sometimes exists also on the back of the hands, accompanied by buccal irritation, such as sensitiveness of the gums and abundant salivation, indicating the close connection that this affection has with dentition; consequently the best means of combating this form is to diminish the irritation of the gums. This may be accomplished by rubbing the gums with the following preparation :—

℞	Glycerin	♏ 160	Bromide of Potassium	gr. xv
	Distilled water	♏ 160	Cocaine	gr. viiss

If the sleep is at all disturbed, **Bromide of Potassium** may be given internally, while an ointment of **Oxide of Zinc** and **Vaseline** may be employed externally.

The third form of eczema differs from the preceding in the absence of keratitis, and in the fact that it commences usually on the scalp, where it is characterized by an abundant desquamation, and may then extend to the eyebrows, the face, and even the neck, back, and shoulders. Its mode of treatment is very simple : The hair should be cut and the surface well washed with soap, and the face should be washed with warm water, to which a little milk may be added to remove all the oils, and then an ointment applied externally in the following proportions :—

℞	Resorcin	1 part	Vaseline	100 parts
	Oxide of Zinc	10 parts		

Or the oxide of zinc may be replaced by **Sulphur** in quantity of sixty to seventy-five grains. In the case of scrofulo-tubercular eczema, the gravest form of all, the surface should be washed by means of Van Swieten's liquid, at first diluted, and finally pure, while at the same time applications should be made of ointment of calomel, one part to thirty of vaseline. But as this preparation, as well as the resorcin prescription which may be used, may be irritating, it must be carefully watched.

In Eczema Seborrhœicum Eichhoff has recently obtained excellent results from the use of a **Resorcin** and **Salicylic Acid**, over fatty soap made by Douglas of Eimsbüttel, Hamburg. The soap contains 3 per cent. of resorcin and of salicylic acid respectively. In the milder forms this soap is used to wash the parts, with warm water, the lather not being quite rubbed off. When a severe case has to be dealt with the lather is permitted to dry on thickly, and the part is covered with gutta-percha tissue (Monat. für Prakt. Derm.," 1889).

Synopsis.—(Vol. 1889, p. 242.) In children with constipation, Hyd. c Cret. in small doses every other night. If catarrh of bowels exist, ℞ Sod. Bicarb. grs. v, Sp. Chloroformi, ♏j, Aq. Anethi, ʒj, M. for a child one year old (Crocker). In gouty cases give **Alkalies** and **Salines**. For strumous children use **Ol. Morrh., Syr. Ferr., Iodidi**, or **Parrish's Food**. In

general debility, Quinine, Ol. Morrh., Nux Vomica, Mineral Acids, or Arsenic; ℞ Vin. Ant. Tart, ℥v t.d. useful in acute attacks, patients being robust (Morris); ℞ Sp. Terebinth, ℥x thrice daily in mucilage, after meals, the last dose not to be taken later than 6 p.m. (Crocker). In obstinate cases counter-irritation by Dry Heat, Mustard Leaves, or Liq. Epispasticus (applied to nape of neck for upper part of body, and over lumbar region if lower part be affected); ℞ Pot. Acetat., ʒiv, Tinct. Nuc. Vom., ʒij, Tinct. Cinchon. Co. ad ʒiv, M. A teaspoonful in a wineglassful of water thrice daily after meals (Bulkley). In chronic eczema with impaired appetite and coated tongue, ℞ Mag. Carb., Bismuth Carb. āā ʒijss, Tinc. Rhei, ʒiss to ʒij, Syr. Zingib., ʒvj., Sp. Chloroformi, ʒij, Aq. ad ʒviij, M. A tablespoonful in water thrice daily (Jamieson); When pliancy and unctuousness of the skin are absent, Pilocarpine Nitrate, gr. ½ to ⅔ given twice daily hypodermically (Jamieson); ℞ Mag. Sulph., ʒj, Ferri Sulph., ʒss, Ac. Sulph. dil, ʒiss, Aq. Chloroformi, ʒvj, M. A tablespoonful thrice daily; useful in many cases of eczema. *Locally:* Avoid washing if possible. Unna's soap is best. Remove crusts by soaking in oil, and poultcing, or by indiarubber appliance, *e.g.*, gloves or skull cap. ℞ Ac. Salicylic, 3·0, Talci, 87·0, Pulv. Amyli, 10·0, M. As dusting powder in acute stage with little secretion (Martindale). To allay itching, ℞ Ac. Carbol., ʒj, Glycerin, Pur., ʒij, Aq. ad ʒviij, M. ℞ Lot. Nigræ, Liq. Calcis āā ʒiv, Mucil. Tragac., ʒj, M. or, ℞ Zinci. Carb., ʒj, Ac. Salicyl., gr. x, Vasel. Opt., ʒj, Cerat. Galeni ad ʒj, M. (Jamieson). Ichthyol as ointment or solution from 5 to 50% (Unna). ℞ Ac. Salicyl., gr. x, Vaselin. Opt, ʒss, Zinci Ox., ʒij, Pulv, Amyli, ʒij, M. Ft. Pasta (Lassar). Unna's Glycerine Jelly, ℞ Gelat., 15·0, Zinci Ox, 10·0, Glycerini, 30·0, Ac. 40.0; melt cautiously and combine, adding 2% Ammonia Sulphoichthyolate; paint this over the part and cover with thin film of absorbent wool (Jamieson). In seborrhœal eczema Unna gives Sulphur; ℞ Resorcin, ʒss, Glycer, q.s. ad ʒiv, M. (Schmitz). In pustular eczema of head in children, Iodoform or Iodol, grs. v to Lard or Vaseline, ʒj, and in about a week, Zinc Oleate, Plumb. Oleate, or Boracic Acid may be substituted for Iodoform; for eczema of face the same may be used, applied under a mask; For eczema of eyelids Ung. Hyd. Nitrat., 1 in 8. Anderson uses Potassæ Fusa, grs. x, to water ʒj, brushing it on the everted lid, and in a few seconds brushing with weak Acctic Acid solution; ℞ Liq. Plumb. Subacet, ℥xv, Vaselin. Alb., ʒj, M. for eczema of lips. For eczema of beard, soothing remedies in acute stage, and then Hyd. Oleat., 1 or 2%, or Ung. Sulph., grs. x or xx to ʒj. To remove thickened epidermis in eczema of palms, apply Pancreatic Emulsion on lint constantly or Papain (Morris), and then use Ac. Salicyl., grs. v. or x to ʒj. For eczema of vulva (examine urine for sugar), Lead and Liq. Carb. Detergens as lotion.

ELEPHANTIASIS.

Synopsis.—(Vol. 1889, p. 245.) During the fever Saline Aperients with Opiates, followed by Quinine and Iron. *Locally:* fomentations; Electricity is often useful in early stages.

EMPHYSEMA.

Synopsis.—(Vol. 1888, p. 244.) Arsenic; Strychnine and Iron; Digitalis; Caffeine and Sparteine, with other tonics when the right ventricle begins to suffer; Digitalis with Diuretics and Diffusible Stimulants, or Guy's Pill of Mercury, Squill and Digitalis, in later stages. Carbonic Acid Gas, as inhalation (p. 31).

(Vol. 1889. p. 245.) Use of pneumatic chamber or compressed air bath.

Kava-Kava; ℞ Ext. Kavæ depur., grs. xlv, Sacch. Alb., grs. ccc, M. Ft. Pulv. divid. in tales x, Sig. Pulv. j 3tis hor.; acts well on the dyspnœa (p. 50).

EMPYEMA. (See also "Pleural Empyema.") *Walter Pye, F.R.C.S.*

Surgical Treatment of.—The line for, and manner of operation in, and after treatment of cases of empyema is discussed by Mr. Howard Marsh. Regarding an empyema as an abscess, he holds that the pus should be evacuated as soon as it is detected, for by its own presence the rate of suppuration is increased, and with that increase the compression of the lung will become more and more marked, while any day the lung may become bound down so that future expansion cannot take place. There are also other risks incurred in leaving an empyema to point or burst; it may open into the air passages or perforate the diaphragm, or cause necrosis of the ribs.

The condition of empyema then, is not one which admits of delay, and in all cases of doubt an exploring needle with an aspirating syringe should be used for diagnosis.

For the *evacuation* of an empyema, aspiration is not so effective as incision; even if the former be done first, in most cases the latter will have to be done sooner or later, and in many cases the character of the pus is such that it will not pass through an aspirating needle. The best place for incision is the eighth or ninth intercostal space, just in front of the angle of the scapula, as recommended by Godlee. An incision should be made through the skin and intercostal muscles, and the pleural cavity opened by thrusting in a steel director.

In adults it is not generally necessary to remove a portion of the rib in order to have room for drainage, but this may often have to be done; cutting bone forceps are best to use. The periosteum should be removed as well as the bone.

Mr. Marsh agrees with the general distrust now felt as to the wisdom of washing out the pleural cavity unless the discharge is from the first, or subsequently becomes, very fœtid. In such a case he recommends lotions of **Boroglyceride, Boric Acid,** or **Tincture of Iodine,** 1 part in 1,000, to be used at about 90° F.

In cases of chronic empyema if free incision does not arrest the discharge, Estlander's operation of free removal of portions of two or more ribs should be performed. By this means there will be an increased probability of opening up any localized collection, and should the lungs be bound down beyond all hope of expansion, the chest walls will be enabled to collapse and thus obliterate the suppurating cavity.

Ichede extends Estlander's operation, of which we have now about ten years' experience, and takes away now, not only the ribs, but the

periosteum and the subjacent pleura, and Sprengel excises sub-periostially two ribs throughout almost their entire length, opening the pleura and washing out.

Prof. Janbottine, in opposition to the large interference with the chest walls which Estlander's and Schede's operations involve, and believing that they are accompanied by great danger of blood poisoning from their leaving a large denuded surface constantly bathed in pus, has urged that removal of the ribs is not essential for the production of collapse of the chest walls, but that simple sub-periostial sections of the fourth, fifth, and sixth, ribs each in two places, viz., along the border of the great pectoral, and in the sub-oscilliary line, will, with pressure on the middle portion, effectively flatten the chest wall. Accordingly, he first evacuates the empyema by a free incision in the seventh interspace, washes out the pleural cavity and closes and seals the wound. He then proceeds to the section of the ribs as mentioned, removing small portions of the bone to render them sufficiently pliable. The two vertical incisions by which the ribs have been exposed in front and behind, are then sutured and dressed, and should heal up aseptically by the first intention.

Janbottine claims that the costal wounds thus made do not come in contact with the pus, and heal as simple fractures, and that the divided ribs, as they yield, reduce greatly the volume of the pleural cavity; and when later, they consolidate in this position, they furnish a sufficient support to the vertebral column, diminishing the tendency to deformity of the latter.

REFERENCES.—Marsh, "Brit. Med. Jour.," Oct. 13, 1888; Janbottine, "Gaz. Heb. des Science Méd.," Jan. 26, 1889.

ENEMATA (Nutritive). *F. de Havilland Hall, M.D.*

Ewald's experiments show that the rectal mucous membrane has the power of absorbing prepared and non-prepared egg albumen better than it could variously prepared peptones. The quantity administered should not exceed 8 ounces, and several should be given during the day. About an hour before administering the nutritive enema the rectum should be washed out with warm water. If the bowel is very irritable, a few drops of laudanum may be added to each enema. ("New York Med. Times," Jan. 19, 1889).

ENTROPION, Spasmodic. *W. Lang, F.R.C.S.*

In this affection de Grandmont has found the following plan of treatment to be more satisfactory than either excision, displacement by plaster or cautery. Three antiseptic sutures, each provided with a needle at either end, are required for the operation. The two needles

of the first thread are inserted 8 mm. apart in the bottom of the lower conjunctival sac, and brought out on the skin surface, about 3 or 4 mm. apart, and 3 or 4 mm. from the lid border; the ends are then tied together tightly. The other two sutures are applied in a similar manner, one on either side of the first. The resulting horizontal furrow is similar to that normally found in the lower lid. The sutures may be left in for two or three months without producing any reaction, or they will cut themselves out, leaving an adhesion between the skin and deep parts.

ENURESIS NOCTURNA.

Synopsis.—(Vol. 1889, p. 52.) Tinct. of **Lycopodium**, gtt. xx to xxx.

EPILEPSY. (See also "Brain.") *Charles L. Dana, M.D., New York.*

Treatment.—There is little new that can be said on the "Bromide" treatment; still some observations made by Gauster are worth noting. He says among other things :—

(1,) The **Bromide** treatment is at present certainly still the best in epilepsy.

(2,) Under a careful observation of the patient's condition, even as much as 20 grammes daily may be administered for a considerable time without injury.

(3,) Pulmonary tuberculosis, severe chronic cutaneous diseases with a tendency to ulceration, and marked disturbances of nutrition are contra-indications to the bromide treatment, unless the mastery of the paroxysms be a question of saving life or of holding in check a severe psychosis.

(4,) Moderate emaciation is no contra-indication, since the weight can be gradually made to increase during the use of the bromides, by administering suitable nourishment.

(5,) During the bromide treatment particular care must be taken that a large amount of food be ingested; and at not too long intervals examination of the lungs and of the skin should be made.

The author does not seem aware that smaller doses may be given by combining bromides with other antispasmodics. ("Wien. Med. Presse," 1889, xxx, p. 609.)

Surgical Treatment, (see "Brain").

Bourneville has tried **Bromide of Nickel** in eighteen cases of epilepsy, with relief in one case and slight improvement in two. In the remaining cases it did no good. Bourneville's experience is not in favour of this drug. ("Prog. Méd.," 1889, No. 26.)

Dr. H. A. Wilderminter reports some good results with **Amylhydrate** especially in nocturnal epilepsy. The drug was given in doses of 5 to 8 grammes daily, disolved in water. ("Neuroe. Cent.," Nov. 15, 1889.)

Simulo which was recommended in mild terms by Eulenberg and Hale-White, has been tried by Dr. Allen Starr with but moderately good results. ("Med. Record.")

Dr. Theodore Diller, of the State Hospital for Insane, at Danville. Pa., has made a careful trial of **Antifebrin** in nine cases of epilepsy. His results are formulated as follows :—

(1,) All cases in which this drug was given continuously there was noted a reduction in the number of fits, ranging from about 25 to 75 per cent., as compared with other months during which patients were on bromide and tonic treatments alternately.

(2,) The remedy was in all cases well borne, producing no apparent mental or physical depression, this in marked contrast with depressant effects noted after a course of bromide treatment.

(3,) No skin eruption was produced.

(4,) In any given case in which a great number of fits are occurring, and where it is desirable to control them as soon as possible, the bromides would be of far more value than antifebrin. ("Therap. Gaz.," p. 385, 1889.)

Dr. Diller's cases were all we presume, of a most chronic and hopeless character.

Dr. H. N. Moyer has used this drug in three cases of epilepsy, in two of which it controlled the attacks considerably. ("Lond. Med. Recorder," Aug. 20, 1888.)

Dr. Niermeyer claims to have cured three cases of epilipsy by anodal galvanization of the brain, *together with* small doses of bromide. ("L'Electrotherapie.")

Dr. H. G. Hill reports the history of a case of epilepsy in a girl of sixteen, in which the attacks had been controlled for three years by **Borax**. ("Med. News.") It is thought to be quite equal to the bromides in controling seizures, by Dr. J. D. Munson, superintendent of the Northern Michigan Asylum. It is to be noted that Dr. Munson's trial cases were probably insane epileptics. Dr. Munson gives some cautions against its prolonged use. It should not be given to epileptics with high arterial tension or weak heart. Prolonged doses are apt to affect the nutrition of the scalp, the hair becoming rough and brittle and in one or two cases alopecia has resulted. A troublesome psoriasis is occasionally induced, which does not yield readily to treatment, nor has the administration of Fowler's solution always prevented its appearance. In one case a suppurative inflammation of the middle ear was always induced by the use of the biborate. Dr. Munson advises that the drug be never given before meals or for long periods

continuously It is well sometimes to alternate its administration with those of the bromides. ("Amer. Lancet.")

The horse-nettle, **Solanum Caroliniense** is recommended in epilepsy by Dr. J. L. Napier in doses of a drachm of the tincture of the berries. (" Med. World.")

Synopsis.—(Vol. 1888, p. 246.) **Bromide and Chloral**; **Calabar Bean**, gr. $\frac{1}{12}$ to $\frac{1}{8}$; To prevent Bromide Acne, **Arsenic, Calc. Sulphide**, or **Hydrobromic Acid.** To prevent bromidization, **Black Coffee**; **Caffeine**; **Cocaine**; **Mineral Acids**; **Strychnine**; **Bitter Tonics**; **Ol. Morrh.**; or use **Bromides** every three days, only in large doses; dilute the Bromide preferably with **Carbolic Ac. Water**, or **Vichy**, gr. xx to Aq. ℥vj. For epilepsy in children, **Oxide of Zinc**, with **Bromides**; **Milk Diet** and **Rest**; **Belladonna** employed with great caution. For adults and chronic cases, **Bromides**; **Belladonna**; **Iodide of Potassium**, and **Ammoniated Sulphate of Copper.** For nocturnal epilepsy, increase dose of **Bromide** at night, and add **Chloral** or **Digitalis**, also if needed, **Strychnine.** In hysterical or erythritic cases, **Turpentine**, **Valerian**, and **Zinc.** For status epilepticus, **Enemata of Chloral.** To prevent attacks, **Nitrite of Amyl**, inhalation of **Chloroform** or **Ammonia**; **Ammonia** internally; **Spirits of Lavender**, or **Alcohol**, a sternutatory, and pressure on the carotids may avert the attack; **Alteratives**, *e. g.*, Mercury, Iodide of Potassium, Arsenic, Antimony, also ℞ Ext. Fab. Physostigma, gr. vijss, Sp. Æther. ℥iss, Aq. Amyg. Amar, sive. Aq. Menth. Pip., ℥vss, M. ♏v to viij for children t.d.; for adults, double dose; **Acetanilide** (p. 2); **Cypripedium**, Tinct. ♏v to xv, Cypripedin, gr. j to ij, in epilepsy due to reflex nervous irritation (p. 45); **Galium Aparine** (p. 53); **Lobeline**, gr. $\frac{1}{100}$ to $\frac{1}{50}$, probably useful (p. 74); **Nickel Bromide** (p. 80).

(Vol. 1889, p. 246.) **Ol. Morrh.** and **Phosphorus**, excluding butcher's meat for two years. Help action of bromides by red pepper pack, before going to bed (add a teaspoonful red pepper to pint of water, soak flannel in this and wrap it round body before going to bed); For muscular twitchings during sleep $\frac{1}{24}$ gr. **Corrosive Sublimate**; when gastro-intestinal symptoms accompany give **Belladonna** and **Zinc Oxide**, or if breath be foul give **Turpentine Resin** with **Belladonna.** **Digitalis** is indicated in cases with genito-urinary or digestive symptoms; **Chloral Hydrate** is useful; galvanism and faradism help in a few cases; **Tincture of Simulo**, ℥ss to ℥ij several times daily; **Antipyrin** useful in some cases but of transitory effect; **Osmic Acid**, gr. $\frac{1}{60}$; **Nitro-Glycerine**, gr. $\frac{1}{100}$ to $\frac{1}{50}$ t.i.d., gradually increased better in *petit mal* than *haut mal* cases. **Actual Cautery** applied over shaven scalp in some cases of chronic hemiplegia and epilepsy; a leaden bonnet has also been used; Galvanisation of the thyroid palliated in some cases; it must be continued for several weeks; **Antifebrin** is almost useless. **Amylene Hydrate**, average dose iijss grammes as hypnotic in epilepsy, especially when rest is disturbed by cramp (p. 12).

EPISCLERITIS. *W. Lang, F.R.C.S.*

Darier describes a form of scleratitis occasionally seen, the disease appearing in the form of little nodules, not unlike phlyctens. In one case, which he watched for three years and tried all kinds of treatment, **Lanolin-Mercurial** frictions brought about a cure. He considers that **Mercury, Colchicin,** and **Salicylate of Soda,** are the most effica-

cious drugs. Salicylate of lithia did not give such good results as the soda salicylate.

EPISTAXIS. *Greville MacDonald, M.D.*

With a good light and a nasal speculum there should be no difficulty in arresting epistaxis by applying styptics to the bleeding points or areas. It generally arises from the septum or inferior turbinals—the regions most accessible to treatment. Failing the usual methods, including the supine posture, before plugging, we may employ tampons saturated with **Oil of Turpentine,** as recommended by Ernyei, who admits, however, that it is highly irritating to the mucous membrane. Fauchon recommends injections of **Citron-juice.**

REFERENCES.—"Pest. Med. Chir. Press"; "Bull. Thérap.," Dec., 1888.

Synopsis.—(Vol. 1889, p. 42.) **Geranium Maculatum,** grs. x to xl, and also used locally.

ERYSIPELAS. *W. Allan Jamieson, M.D.*

The application which is most grateful to the patient, and at the same time the one which seems to exert most influence in restraining the advance of the disease, is **Ichthyol** in combination with an ointment recommended by Sir Dyce Duckworth. This consists of equal parts of prepared chalk and lard, with, in cold weather, as much almond or olive oil added as will render it sufficiently soft; to this 25 per cent. of ichthyol is added. The parts are smeared over freely with the ointment and then enveloped in salicylic wool. In place of this Nussbaum has advocated an ointment of equal parts of **Lanolin** and **Ichthyol.**

ERYTHEMA NODOSUM.

Synopsis.—(Vol. 1889, p. 249.) One of the best remedies is **Rhus Tox** ℥ ii. to v. thrice daily (Percy Wilde). Rest in bed, painting tubercles with flexible **Collodion** and giving **Salicin** internally. *Erythema Multiforme.*—Wash with gruel and apply ℞ Potass. Sulphurat., Zinci Sulph., Glycerini āā ʒj, Aq. ʒiv, M. Ft. Lot., use this twice daily; and give ℞ Potass. Acet., ʒiv., Tinct. Nuc. Vom., ʒij, Ext. Rumicis Fl., ʒiv, M. A teaspoonful in water thrice daily, after meals. *Erythema Pernio*—(see "Chilblains".) *Erythema Intertrigo*—As dusting powder, **Zinc. Ox.** j part to **Starch,** iij parts, or **Zinc Ol.** j part to **Kaolin,** (thoroughly pulverised) iij parts; In infants **Ac. Borac,** grs. xx to **Lard** or **Vaseline,** ʒj (Crocker); or, ℞ Bismuth. Subnit., ʒiij, Plumbi Carb., ʒij, Ung. Zinc. Ox, Benz., ʒiss, M. Ft. Ung. (Shoemaker).

ERYTHRASMA.

Synopsis.—(Vol. 1889, p. 14.) **Anthrarobin**; ℞ Anthrarobin, x, Borax, viij, Distilled Water, lxxx, M.; or, ℞ Anthrarobin, xx, Borax, xxxv, Alcohol and Glycerine, each xc, M.; The alcoholic tincture is preferable to ointment, and washing first with **Potash Soap** increases its action.

ERYTHRO-MELALGIA. *F. de Havilland Hall, M.D.*

This is the name applied by Dr. Weir Mitchell to a rare vaso-motor neurosis of the extremities. Erythro-melalgia is a Greek compound and signifies an affection of the extremities, accompanied by redness and pain. The symptoms are characteristic, and usually commence with pain in one or both feet—often in the ball of the foot or of the great toe, or in the heel. Occasionally this pain involves the dorsum of the foot, and in rare cases the leg; more often it is confined to one or both soles. At first it is usually induced by any excessive exertion in standing or walking; but after a time it is experienced whenever the upright posture is assumed, or even when the feet merely hang down. The pain is usually of a burning character, and as the disease advances is described as intensely acute, often coming on in agonizing paroxysms. It is relieved by the horizontal position and by cold, but is invariably aggravated by standing and walking, or by warmth, as by sitting near the fire, or even by the heat of the bedclothes. It is worse in summer than in winter. Pain, however, is not the only symptom referable to the feet; whenever any walking exercise is taken the parts flush, and in severe cases assume a dusky-red colour.

Dr. Mitchell considers the vaso-motor phenomena either as caused by the implication of the vaso-motor centres, or as due to a reflex affection caused by the pain, or by the implication of the central organs, disease of which gave rise to the pain. Dr. John Morton, in the "Lancet" of January 5th, 1889, gives a detailed account of the disease, with cases. In one patient electricity, massage, and various other local and general remedies were tried without any relief being obtained. As a last resource the subcutaneous injection of **Morphia** and **Atropia** was ordered, and proved highly efficacious, beneficial effects manifesting themselves almost at once. The needle of the syringe was passed directly into the sole of the foot on the inner side. This procedure was practised twice daily for about three weeks, and resulted in well-nigh complete recovery.

EVISCERATION. *W. Lang, F.R.C.S.*

Prince thinks that the severe pain which follows evisceration of the eyeball is caused by inflammatory irritation and pressure on the ciliary nerves lying on grooves in the inner surface of the sclera. He therefore recommends that the inner surface of the sclerotic be wiped over with a piece of cotton wool dipped in pure **Carbolic Acid** (95 per cent.) so as to render the nerves anæsthetic.

EXOPHTHALMIC GOITRE (Graves' or Basedow's Disease). (See also "Electro-Therapeutics.") *F. de Havilland Hall, M.D.*

What is the pathology of exophthalmic goitre?—It was formerly held that disease of the cervical sympathetic was the cause of exophthalmic goitre, but this theory had to be discarded, as often this part of the nervous system has been found healthy, or if changes have been discovered they are such as have been met with in many other maladies. The view which is now receiving the most support is that the disease is due to alterations in the central nervous system, but so fine as to escape observation by the means at present at our disposal. The part of the brain in which the disease is most likely seated is the floor of the fourth ventricle. Dr. Hale White says that, in favour of placing the seat of the disease there, there is the fact that patients with exophthalmic goitre are particularly liable to die suddenly. He has published a series of cases which shows this; and that minute hæmorrhages in the floor of the fourth ventricle will cause sudden death is proved by a case (not of exophthalmic goitre) which Dr. White recorded.

Drs. Manby and Henry Barnes report cases of diabetes in connection with exophthalmic goitre, which are of great interest when considered in the light of the experiments of Bernard and Schiff, and which would seem to point to a similar origin of these two diseases.

New symptoms in exophthalmic goitre.—Charcot has directed attention to the fact that the electrical resistance in the bodies of patients with this disease is diminished. This has been attributed by Dr. Wolfenden to the dilatation of the cutaneous capillaries, which saturates the skin with moisture, and so reduces the thickness of the badly conducting epidermis to a minimum. Elevation of temperature has also been remarked in a patient with Graves' disease. Thermophobia is a sign of value; the patients are always too hot in bed, continually unclothe themselves, and that without fever. Trembling is another symptom, and Charcot draws attention to the feebleness of limbs and paraplegia as other symptoms of the disease. Eulenberg has put on record a combination of Graves' and Addison's disease.

What is the Treatment of Graves' disease?—First, there is hygienic treatment, pure and simple; a quiet life in the country, freedom from emotional strain, a milk diet when the heart is not enfeebled, and an abundant ordinary diet when it is, with the addition of coffee and wine. The two methods of medical treatment most in vogue are that of Jaccoud and that of Friedreich. The first consists in the administration of **Arsenious Acid** and **Bromide of Potassium.** Night and morning, minute doses of arsenious acid are given, and between

meals from half a drachm to a drachm of bromide of potassium. This alone is used by Jaccoud in mild cases. Friedreich's method is essentially different; no bromide, no arsenic, but **Quinine**—quinine for an indefinite period. Certain drugs are absolutely contra-indicated. These are the iodides of potassium and sodium, which augment the respiratory difficulty resulting from increased frequency of the heart's action. **Digitalis** is sometimes useful, sometimes not. When quickened heart-beats are due to loss of cardiac contractility, digitalis is of value in slowing the rapid systole that follows enfeeblement of the myocardium. But when the heart is over-excited without being weakened, digitalis, by strengthening the force of its contractions, must inevitably do harm. **Electricity** also shows good results, employed in two ways quite distinct. One is the method of Eulenberg and Guttmann, which consists in faradisation of the sympathetic, one electrode being applied to the region of the sympathetic in the neck, and the other to the cervical vertebræ. The second mode of electrical treatment is that of Charcot and Vigouroux, who apply galvanism to the præcordial region. **Hydrotherapy** also merits recognition as a valuable adjuvant, though inadmissible in all cases where there is any lesion of the heart or lungs. Sea-bathing, the pack, and the needle bath have all been of great benefit. Cheerful companionship and congenial surroundings are advocated by the followers of each and every method.

If the statement recently made at the Academy of Medicine in regard to hypnotism be just—that it equalises the circulation and regulates the action of nerve force—then the wizard remedy of France has magnificent possibilities in this peculiar and untried field. From the hypnotic sleep and hypnotic suggestion yet another and novel method may arise. (See "Hypnotism.")

According to the "Lancet," Stiller, of Buda Pesth, obtains remarkable results by sending patients to altitudes varying from one thousand five hundred to five thousand feet in the Tyrol and among the Carpathian mountains. Compression of the thyroid, gradually and systematically increased, has been known to bring about marked diminution of all the symptoms. Sometimes the disease disappears spontaneously, a fact that has probably again and again given repute to some drug or therapeutic agent quite innocent of the cure.

Marriage, pregnancy, and the other duties incident to the maternal state, have caused this disease to vanish for ever. Is there any clue here? Has the hygiene of reflex action nothing to do with the case. Health is best secured by the exercise and co-ordination of large

numbers of reflex arcs in widely separated parts of the body, and the development and use of associated reflexes is a practical means of modifying nerve-centre function. Re-enforcing or inhibiting impressions sent into appropriate areas by the application or removal of particular stimuli affects an advantageous redistribution of nervous energy. The maternal state equalises the circulation and regulates the action of nerve force. In other words, it calls into normal activity weak, depraved, or overacting cells, and sacrifices all their pet peculiarities to the work of constructing a new creature. This profound impression of law and order remains indefinitely, perhaps for ever, and the functional nervous trouble is deprived of *raison d'être*. Treatment with this end in view—to equalise the circulation and regulate nerve-force—is certainly based upon a rational premise, whether the result is obtained by means of the pack, hypnotism, electricity, or the use of drugs, or through the power of certain agencies as yet only among the possibles.

Strophanthus has been found of service in some cases of Graves' disease. Dr. Daniel B. Brower has administered it in three cases with benefit. He gives the tincture in two-drop doses every six hours, and gradually increases it until ten-drops are given.

Professor Valieri, of Naples, after using **Cannabis** in three cases of exophthalmic goitre recommends the following formula: Four and a half grains of Gastinet's Cannabin are to be mixed with sugar of milk, and made into five pills, to be taken in twenty-four hours.

Dr. Hopmann, of Cologne, the late Prof. Hack, of Freiburg, and Prof. B. Fraenkel, of Berlin, have reported cases in which intranasal operations undertaken for the relief of nasal obstruction had very unexpectedly led to the diminution, or even disappearance, of the symptoms of Graves' disease, from which the patients in question had concomitantly suffered. Dr. Semon, on the other hand, had the misfortune of being in the position to exhibit to the Clinical Society of London a patient in whom an operation for the removal of nasal polypi by the galvano-caustic snare, had suddenly caused exophthalmos of the right eye.

REFERENCES.—Hale White, "Brit. Med. Jour.," March 30, 1889; Manby, *Ibid*, May 11 1889; Barnes, *Ibid*, June 15, 1889; Charcot, "Bull. Méd.," Feb. 3, 1889; Eulenberg, "Berl. Klin. Wech." No. 1, 1889; "New York Med. Jour.," Nov. 3, 1888; "Cent. f. Klin. Med.," 1888, No. 34, p. 617; Jaccoud, "Jour de Méd. de Paris," August 26, 1888, p. 225; "Phil. Med. News," vol. liii. p. 716; "Jour. Amer. Med. Assoc.," vol. xi, No. 18, 1888; Valieri, "Wien. Med. Presse," No. 41,

1888; Hopmann, "Berl. Klin. Woch.," No. 42, 1888; Semon, "Lancet," vol. i., 1889, p. 789; Wolfenden, "Cent. f. Lanryng.," vol. vi. p. 131.

EYE (Diseases of). *W. Lang, F.R.C.S.*

Antiseptics in Ophthalmic Surgery.—Several observers have now investigated the normal secretions of the conjunctiva and found them to contain various pathogenic microbes. It is therefore necessary in all cases to follow some plan of disinfection of the conjunctival sac and lachrymal passages, before operating for cataract, etc. One of the best is to apply warm compresses of **Perchloride of Mercury** solution, 1 in 1000 or 2000, to the lids for the night previous to the operation, the nurse washing out the conjunctival sac each time she changes the compress. The surgeon can be confident that, when he finally washes the eye immediately before operating, everything has been done to ensure perfect asepsis.

Weeks has investigated the killing power of the following antiseptics, amongst many others, and finds that a solution of **Perchloride of Mercury** destroys the vitality of staphylococcus :—

	1 : 500 at the end of	10 seconds.
	1 : 1000 ,, ,, ,, ...	45 seconds.
	1 : 2000 ,, ,, ,, ...	80 seconds.
Nitrate of Silver.—	1 : 50 at the end of	8 seconds.
	1 : 100 ,, ,, ,, ...	12 seconds.
	1 : 500 ,, ,, ,, ...	80 seconds.
Salicylic Acid.—	1 : 600 at the end of	60 seconds.
	1 : 1000 ,, ,, ,, ...	4 to 5 minutes.
Permanganate of Potash.—	1 : 50 at the end of ...	20 seconds.
	1 : 100 ,, ,, ,, ...	60 seconds.
Carbolic Acid.—	1 : 20 at the end of	15 seconds.
	1 : 40 ,, ,, ,, ...	30 to 60 seconds.

Boric acid, salicylate of soda, chlorine water, peroxide of hydrogen, sulphates of iron, copper, and zinc, and chloride of zinc have no action on staphylococcus. Calomel in powder acts in three minutes, and Iodoform in twelve hours.

He advises that instruments which cannot be kept polished should be dipped in boiling water for two to three minutes. Well polished steel instruments are perfectly aseptic when rubbed with a clean dry cloth.

Rheumatism and Gout.—In all eye affections of a rheumatic or gouty nature, especially the more severe and chronic ones, **Colchicin** gives excellent results. Darier administers it in doses of $\frac{1}{30}$ to $\frac{1}{10}$ of a grain spread over the twenty-four hours.

In acute affections, due to the same cause, **Salicylate of Soda** acts better, and in somewhat milder cases **Salicylate of Lithia** should be

tried. In all cases, however, a combination of the three drugs may be tried, with good effect.

Gorecki recommends the **Tincture of Colchicum** in gouty scleratitis and episcleritis.

Albuminuric Retinitis. (See also "Albuminuria.") — Injections of **Pilocarpine** are recommended by Schutz in albuminuric retinitis, and in detached retina in young people due to plastic choroiditis. In five cases, after four to fifteen injections, extending over one to three weeks, combined with rest on the back and a compress bandage, a cure of the detached retina was produced. In tobacco and alcoholic amblyopia, one injection of pilocarpine was found in some cases to produce rapid improvement of vision, whilst in other cases no change could be noticed ; in these latter a prolonged course was of no use, and they only improved after **Strychnine** injections, combined with the administration of **Iodide of Potassium.**

Enucleation of the Eyeball during Purulent Panophthalmitis.— What one should do in this condition is still an open question, about one half of the more prominent ophthalmic surgeons removing the eye during the acute stage, whilst the remainder distinctly object to this procedure, contenting themselves with either simply incising the cornea, so as to allow a free escape of the contents of the globe, or with evisceration of the globe, that is, removing the whole of the cornea, scraping out the contents of the sclerotic with a spoon, and dusting the interior with **Iodoform** or **Boric Acid**, after washing it and the conjunctival sac with **Perchloride of Mercury** solution, 1 in 2000. The only objection to this plan of treatment is that the severe pain is not relieved for some days (one to four) after the operation. This, however, is but a slight matter compared with the risk of purulent meningitis, which not unfrequently follows excision of a suppurating eye. Statistics of such a disastrous result to so slight an operation are probably very incomplete, but the number of cases already recorded shows that it is an occurrence which should always be borne in mind as likely to occur, in spite of all antiseptic precautions. The question arises, therefore, if it would not be wiser to abandon excision in panophthalmitis in favour of evisceration, especially, if on further trial, Prince's recommendation of applying a 95 per cent. solution of **Carbolic Acid** to the interior of the sclerotic should prove efficacious in relieving the pain.

Synopsis.—(Vol. 1888 p. 251.) **Antipyrin**, gr. j, in headache, or ciliary pain of keratitis, corneal ulcers, glaucoma, etc.; to dilate pupil, a single drop of either **Cocaine Hydrochlor.**, 1 to 25, or **Homatropine Hydrobrom.**, 1 to 500, or **Atropine Sulph.**, 1 to 25,000, or **Duboisine Sulph.**, 1 to 5000, or **Daturine Hyoscyamine**, or **Hyoscine** of same strength as Duboisine.

For Styes, a lotion of **Boric Acid**, 1 to 30 of water; **Calcium Sulphide**, gr. ½ q. d., arrests the formation of a stye; **Hamamelis**, Tinct. ɱv to ʒj, in extravasation of blood under conjunctiva. **Scopoline** (p. 91). **Atropine** and **Cocaine Ointment** to break down adhesions in iritis.

(Vol. 1889, p. 249.) **Antipyrin** injections into temple for relief of ocular pain, also in keratitis, iritis, and glaucomatous irido-choroiditis; the formula used is **Antipyrin**, xxv centigrammes; **Cocaine**, ss centigramme; **Distilled Water**, x drops; **Corrosive Sublimate**, 1 to 2500, as lotion in purulent and diphtheritic ophthalmia, in trachoma, sycosis tarsi, and when ulcers exist. **Pilocarpine** injections in tobacco amblyopia. **Cineraria Maritima Juice**, ij drops instilled thrice daily for cataract (p. 32); **Ephedrine**, 10% solution, useful as **Mydriatic** (p. 38).

FEVER. (See Special Articles.)

Synopsis.—(Vol. 1888.) **Acetanilide** (p. 2); **Acetine Chloroform** (p. 5); **Acetphenetidin** (p. 5); **Aconite** (p. 6); **Antipyrin** (p. 13); **Antithermin** (p. 16); **Hydrochinon** p. 63); **Menthol** (p. 76); **Parthenium** (p. 81).

(Vol. 1889, p. 43.) **Veratrum Viride**, 1% solution, gtt. x to xx, in early stage of fever depending on gastric derangement.

FISTULÆ. (See "Abscess and Fistula," and "Anus, Artificial.")

Synopsis.—(Vol. 1888.) **Hydrastis** locally (p. 62).

FRAMBŒSIA.

Synopsis.—(Vol. 1889, p. 255.) **Tonics**; apply disinfectants, *e.g.*, **Iodoform, Carbolic Acid**, or **Boracic Acid** lotions.

FURUNCLE OF THE EAR. (See "Ear, Diseases of.")

FURUNCULOSIS.

Synopsis.—(Vol. 1889. p. 256.) **Fresh Yeast**, half a wineglassful night and morning (Crocker); **Calcium Sulphide**, gr. $\frac{1}{10}$ sec. vel. ʒtis. hor. (Ringer); **Tar Water** up to a quart a day (Hardy); Duhring recommends **Arsenic**, and Piffard uses **Fellowes' Syrup**; application of **Nitrate of Mercury Ointment** (Kenner).

POST-ECZEMATOUS.—Unna ("Monats. Prak. Der.") states that the development of furuncles along with or following eczema is not uncommon, and the longer the eczema has lasted and the less antiseptic remedies have been employed, the greater the probability of furuncular lesions. To mitigate and to avoid this complication the incorporation of **Carbolic Acid** or **Thymol** in the ointments used for the eczema is advised. The addition of a minute quantity of **Corrosive Sublimate** to **Oxide of Zinc Ointment**, aided by the administration of **Calcium Sulphide**, may be considered, however, the most certain method to adopt in cases in which boil formation is likely to occur.

GALL-BLADDER (Surgery of.) *A. W. Mayo Robson, F.R.C.S.*

Surgical interference may be called for in: (1,) Wound, or perforation of the gall-bladder; (2,) Cholelithiasis; (3,) Obstruction in the ducts; (4,) Hydrops and empyema of the gall-bladder.

(1,) *Perforation of the gall-bladder* may occur from internal injury, as in a stab or gunshot wound ; in ulceration from within, as from the irritation of gall-stones ; or from rupture of hydrops or empyema.

Treatment. — In cases of perforation, wound, or rupture, immediate laparotomy is called for, as a fatal termination is otherwise almost inevitable. Cases have been recorded, however, where patients have survived stab or bullet wounds of the gall-bladder.

Thiersch records a case where he removed successfully, over forty pints of bile from the abdominal cavity after the gall-bladder had been ruptured by a blow. Experiments of Schüppel and Boström apparently prove that the peritoneum can absorb extravasated bile without serious trouble.

In cases of ulceration from within, generally caused by gall stones, adhesion usually occurs to contiguous organs, or to the parietes, and the gall-stones may be discharged by abscess externally or by ulceration of the intestine. Serious symptoms often arise from peritonitis or from septic absorption, and may call for laparotomy ; but as in a case reported by Mr. Johnson, in the "Lancet," March 17, 1888, even such a large concretion as one measuring three-and-three-eights of an inch in circumference, ulcerated its way quietly and safely into the intestine, whence, after causing some symptoms of obstruction for a few days, it was passed *per anum.*

(2.) *Cholelithiasis.*—Since more attention has been directed to the gall-bladder, the pathology and differential diagnosis has made great progress. A paper of Dr. Bristowe's, in the "Lancet," Feb. 19, 1887, may be referred to with advantage, also one by Dr. Ord, in the "Brit. Med. Jour.," March 5, 1887, in which he drew attention to the existence of gall-stones without symptoms ; their passage without discomfort ; their giving rise to pain without jaundice ; their producing intermittent pyrexia, hæmorrhage, glycosuria, and reflected inflammation ; and to the frequent co-existence of gall-stones with malignant disease.

Dr. Myrtle, in a paper read before the Yorkshire branch of the British Medical Association in Nov., 1887, related several examples of mistakes in the diagnosis of gall-stones which had come under his notice, and particularly dwelt on the difficulty of diagnosing gall-stones from malignant disease. He thought that the most frequent cause of these so-called gall-stone attacks, was catarrh of the ducts ; and that these cases were greatly benefitted by the treatment at Harrogate.

The diagnosis chiefly rests on paroxysmal attacks of pain, starting on the right hypochondrium, and radiating thence over the abdomen and to the right shoulder ; the attacks being often accompanied by vomiting or by collapse, and sometimes followed by jaundice ; but

jaundice is frequently absent. The persistence of jaundice is suspicious of malignant disease.

The formation of a tumour in the region of the gall-bladder, *i.e.*, below the tenth rib on the right side, oval or pear-shaped, tense on palpation, and moving with respiration, points to blocking of the cystic duct; or, if there be jaundice, of the common duct.

The presence of gall-stones in the motion after an attack is valuable evidence, but their absence does not negative cholelithiasis, as shown by a case recently operated on by the writer, where he removed sixty-six gall-stones from a patient who had suffered for years from attacks of biliary colic without at any time being able to discover gall-stones in the motions. In forming a diagnosis, cancer of the adjoining parts, hydatid tumour, and renal enlargement must be eliminated, if possible.

A diagnostic point of importance is that the gall-bladder enlarges in a direction obliquely downwards and forwards, in a line, which drawn from the tenth costal cartilage, crosses the middle line a little below the umbilicus.

The tumour may be any size; Kocher and Lawson Tait have both operated on cases supposed to be ovarian cysts.

Ziemmsen, in 1883, called attention to the diagnostic value of filling the large intestine with carbonic acid gas; but Minkowski thinks that a gradual distension with water answers better. When the bowel is distended, tumours of the gall-bladder are pressed upwards and against the abdominal parietes, which fact is of great importance in distinguishing them from renal tumours.

Dangers of Cholelithiasis.—Exhaustion; fatal collapse; fatal jaundice; hydrops and empyema of gall-bladder; perforation of gall-bladder or ducts, causing abscess, peritonitis, septicæmia, intestinal obstruction, or hæmorrhage.

TREATMENT.—The only medical treatment which seems to be useful is the administration of Carlsbad water, which is best given before breakfast. During the attacks the pain must be relieved by sedatives, of which the subcutaneous injection of morphia is the most satisfactory. Hot fomentations and the drinking of hot water often give relief. Large doses of olive oil are said to cause the expulsion and to favour the passage of "gall-stones;" but Dr. Kishkin has made experiments ("Meditsinskœ Obozrenie,") which would seem to prove that olive oil has no effect on biliary calculi, the stones evacuated being in reality only masses of oily acids formed into the shape of small concretions. [In our experience a pill containing **Belladonna,** gr. ¼, **Podophyllin Resin,** gr. ¼, is a remedy as nearly approaching a specific as it is possible to obtain. ED.—"Med. Ann."]

Indications for surgical interference in cholelithiasis: (*a*,) In the case of repeated attacks of biliary colic, apparently due to gall-stones, which, not yiel ing to medical treatment, are wearing out the patient's strength; (*b*,) In perforation from ulceration, or when there is evidence of suppuration set up by gall-stones; (*c*,) In empyema, or in dropsy of the gall-bladder; (*d*,) In persistent obstructive jaundice, when there is reason to think that the common duct is occluded by gall-stones. It must be borne in mind that jaundice adds materially to the danger (Lawson Tait). Musser and Keen report in the "Amer. Jour. Med.," Oct., 1884, that five out of seven cases of cholecystotomy died where jaundice was present, whereas, in twenty-eight other cases without jaundice, there were only five deaths.

Obstruction in the ducts may arise from catarrh; from foreign bodies, as gall-stones, worms, or hydatids (see Black, "Brit. Med. Jour.," July 16, 1887); from stricture (see Mayo Robson, "Lancet," Oct. 31, 1885); or from external compression, by new growths, or by inflammatory exudation, thus giving rise to dropsy or empyema of the gall-bladder. If the common duct be obstructed, there will also be jaundice.

The following operations have been performed on the gall-bladder: (1,) Sounding for gall stones; (2,) Aspiration of distended gall bladder; (3,) Cholecystotomy; (4,) Cholelithotomy; (5,) Cholelithotrity; (6,) Cholecystectomy; (7,) Cholecystenterostomy.

(1,) *Sounding.*—Puncture with a fine needle or with a long probe introduced through a trochar, has been employed to sound the gall-bladder for calculi. That this is not unattended by danger, is proved by the fact of death having occurred after puncture in a case of Dr. Harley's, which is reported in the "Med. Times and Gaz.," May 17, 1884. If exploration be needful, it is best done by a small incision over the gall-bladder, large enough to admit the finger.

(2,) *Aspiration* through a fine needle may be performed in distended gall-bladder, but it is to be borne in mind, that serious symptoms have been known to follow the operation, and that in very few cases can it give more than temporary relief. Dr. Irving, of Huddersfield, reported a case where, after aspiration of a distended gall-bladder with serious symptoms of obstruction, the patient made a complete recovery.

(3,) *Cholecystotomy* is the operation most frequently employed in the surgical treatment of the gall-bladder. It is performed by incising the parietes over the most prominent part of the tumour if one be present; but if there be no swelling, by a vertical incision from the tip of the tenth costal cartilage. If the gall-bladder

be distended, it is aspirated before being opened. The edges of the incision are sutured to the parietal peritoneum and skin by interrupted silk sutures, a drainage tube being inserted into the incised gall-bladder. If gall-stones be present, they are removed (*"Cholelithotomy,"*) by forceps or scoop. If a gall-stone be impacted in the duct, it may be crushed (*"Cholelithotrity,"*) as suggested and performed by Mr. Lawson Tait. For the description of the operation, reference can be made to the "Brit. Med. Jour.," July 12, 1884, and to the "Lancet," Aug. 29, 1885.

Langenbach recommends in the "Centralb. für Chir.," 1887, No. 25, p. 75, suture of the gall-bladder, and returning it into the abdomen; but that this ideal cholecystotomy is dangerous, Lange, Meredith, Küster and Keen have shown, for if the gall-bladder becomes distended the stitches give way; and besides, the whole operation must be undertaken anew if there should be a fresh formation of calculi, whilst in ordinary cholecystotomy a simple incision would be sufficient to relieve the bladder of its contents. On these grounds, the operation with suture of the gall-bladder, was decided by the last Surgical Congress to be unadvisable.

Zielewicz reported in the "Centralb. für Chir.," No. 13, 1888, that he had performed cholecystotomy successfully with ligature of the cystic duct, and remarked that the operation is simpler and less dangerous than cholecystectomy, and avoids the danger of biliary fistula.

Dr. Jones, in the "Med. Chron.," March, 1887, reported a successful case of cholecystotomy performed in two stages; the gall-bladder having been opened on the sixth day, giving exit to several ounces of pus, and a large gall-stone. This delay is quite unnecessary, if ordinary precautions be taken.

Mr. J. W. Taylor, in the "Brit. Med. Jour.," Jan. 21, 1888, described how, in a case of cholecystotomy with a gall-stone impacted in the cystic duct which he could not remove, and which he felt it would be dangerous to break, he succeeded in softening and ultimately disintegrating the stone by having the gall-bladder syringed out night and morning with hot water through the drainage tube opening; at the end of two weeks the impacted stone was found to be loose, and so soft that it broke to pieces on being grasped by Lister's sinus forceps, the fragments then being extricated without difficulty.

Mr. Thornton, "Brit. Med. Jour.," p. 983, vol. ii., 1889, mentions how, in a case of calculus impacted in the common duct, he incised the duct, removed the stone, and afterwards successfully sutured the opening.

In the "Lancet," April 14, 1888, Mr. Lawson Tait reported eleven additional cases, bringing the number of his cholecystotomies up to forty-one with two deaths. In all the cases that had recovered, there had been no recurrence of the disease.

In the "Brit. Med. Jour.," p. 983, vol. ii., 1889, and in the "Clin. Soc. Trans." for 1889, will be found a report of fourteen cases by the author, with only one death, and that in a patient with persistent jaundice due to cancer of the head of the pancreas.

Depage, "Jour. de Med. Brux.," No. 24, 1888, gives statistics of seventy-eight cholecystotomies, in six of which the gall-bladder was sutured, and returned with a 50 per cent. mortality; of the remaining seventy-two cases eleven died, which equals a mortality of 15·27 per cent. These statistics in the opinion of the writer, are not by any means true as regards the operation in experienced hands.

Cholecystectomy is performed by Langenbach in preference, in order to remove all future possibility of gall-stone formation, it having been suggested that the concretions form in the gall-bladder, as a rule, and not in the liver. In the "Birm. Med. Review," p. 230, April, 1889, is the report of a case by Mr. Lawson Tait, in which he found an abscess in the liver containing gall-stones, which must have formed in the liver and not in the gall-bladder. Cholecystectomy should probably be limited to: (1,) Contracted gall-bladder which cannot be sutured to the parietes; and (2,) Perforation from ulceration or empyema, the tissues being thin and unable to bear suturing.

The operation is performed by separating the gall-bladder from the liver, and dividing the cystic duct between two ligatures; the proximal end of the duct being secured by one or two Lembert's sutures, the area of operation being isolated by sponges.

Cholecystectomy would seem to be a much more formidable and dangerous operation than cholecystotomy; but Depage estimates the mortality as only 9·99 per cent., and Mr. Knowsley Thornton prefers cholecystectomy to cholecystotomy.

Cholecystenterostomy.—It was proposed by Nussbaum that, when the obstruction to the passage of bile along the common duct is due to irremediable causes, the gall-bladder should be opened and stitched to an opening made in the duodenum or into another convenient part of the intestine.

The operation has been performed successfully by Kappeler on a woman, aged fifty-one (see "Brit. Med. Jour.," Oct. 6, 1888, p. 787); by Socin, in a patient, aged fifty-one, for obstructive jaundice ("Cor. für Schweitz."); by Mayo Robson, in a woman, aged forty-two, for biliary fistula of fifteen months' duration (see "Trans. Roy. Med.

Chir. Soc.," 1889); and by M. Terrier, in a similar case. For details of the operation, see Gaston, "Brit. Med. Jour.," Feb. 5, 1887.

REFERENCES.—"Annals of Surg.," May, 1886; Tillman, "Cent. für Chir.," No. 25, p. 76; Lawson Tait, "Lancet," p. 1295, vol. i., 1889; Depage, "Jour. de Med. Brux.," 1888, No. 24; Zewker, "Deut. Arch. für Klin. Med.," Band 44, Heft. 2 and 3; Page, "Lancet," 1889, vol. ii., p. 212.

GALL-STONES (The Extrusion of Gall-stones by Digital Manipulation).
George Harley, M.D., F.R.S.

Within the last few years it has been conclusively shown that biliary concretions in the shape of sand, gravel, inspissated bile, and gall-stones, are far more commonly met with in England than was formerly imagined, and not only so, but their presence frequently leads to a fatal termination without the true cause of death having been detected, until the necropsy has revealed it. This chiefly arises from the fact that not only in the early but even in the advanced stages the symptoms of biliary concretions—except where actual jaundice is present, which is far from always being the case—so closely resemble those of ordinary indigestion and flatulent dyspepsia as to be mistaken for them. We have drawn up the subjoined table of

THE PRESENCE OF THE SIGNS AND SYMPTOMS OF THE BILIARY CONCRETIONS BEING INDICATED BY FIGURES, THEIR ABSENCE BY LINES.

	Biliary Concretions impacted in—			
	Intra-hepatic Ducts.	Cystic Duct.	Hepatic Duct.	Common bile Duct.
Indigestion and flatulent distension of stomach and intestines	1	1	1	1
Dull aching or acute epigastric pain	2	2	2	2
Nausea or vomiting	—	3	3	3
Chills or shivering	—	4	4	4
Tenderness on pressure over gall-bladder or liver	3	5	5	5
Jaundiced skin and eyes	—	—	6	6
Pipe-clay-coloured stools	—	—	7	7
Saffron or porter-coloured urine	—	—	8	8
Itching of the skin	—	—	9	9
Distended gall-bladder	—	*	—	10
Enlarged liver	—	—	10	11

* Although the gall-bladder is in these cases never distended with bile, if the impaction be complete, and is continued sufficiently long, it may become distended by white mucus-secretion. For the *modus operandi* in the formation of white liquids in the gall-bladder, see the writer's book on "Diseases of the liver, with and without Jaundice," where its physiology as well as pathology is given in detail.

their symptoms in the hope of rendering easier the early diagnosis of biliary concretions; for, as everyone knows, by far the majority of diseases are remediable, if not even actually curable, when properly treated in their early stages. And it is no exaggeration to say that biliary concretions is markedly one of those. We hope, then, that our table may be found useful to the busy practitioner who has no time to devote to diluted symptomatology.

Such being the symptoms the next point is how are we to get rid of the enemy when we have ascertained not only his presence but his whereabouts? Several surgeons have recently strongly advocated the removal of biliary concretions by the knife, and although several successful cases have been reported the result in the majority of instances has not proved sufficiently encouraging to admit of our recommending the operation to a patient with a light heart, and this being the case we desire to make more widely known our recently proposed method of mechanically extruding biliary concretions from the gall-bladder and biliary ducts by digital manipulation through the intact abdominal walls. Although for ten years and more we have been in the habit of practising the method in suitable cases, and had hinted at it in our writings, it was not until the beginning of this year we ventured to write a short monograph on the subject, after we had, as we believe, undeniable evidence of the benefits attending it, as well as being more than ever conscious of the danger of allowing gall-stones to remain in the gall-bladder or biliary passages sufficiently long to induce ulceration and perforation by pressure.

The two most remarkable of our cases were those in which actual gall-stones were not only mechanically extruded from the bile ducts during the manipulating process, but actually found in the patients' stools in ten, twenty, and forty-four hours respectively after the operation. The annexed drawings are representations of the exact size and shape of the stones alluded to.

Fig. 25.—Gall-stone artificially extruded in fifteen minutes by digital manipulation from the common bile duct of a lady, aged fifty-five, and found in the stool forty-four hours after the operation, after having been supposed to have been impacted in the duct for nine months.

Fig. 26.—Two hard and sharp-cornered gall-stones artificially extruded from the common bile duct (in which they had been for three weeks firmly impacted) of a gentleman, aged fifty-two. The first stone being found in a stool passed ten hours, and the second found in one passed twenty hours after the first time digital manipulation was practised upon the patient.

Neither of the patients ever suffered from gall-stone symptoms again. The lady died four years afterwards from an affection of the lungs. The gentleman is still alive and well.

Our method of procedure will be readily understood. It is so simple that it seems somewhat surprising that it was not sooner suggested.

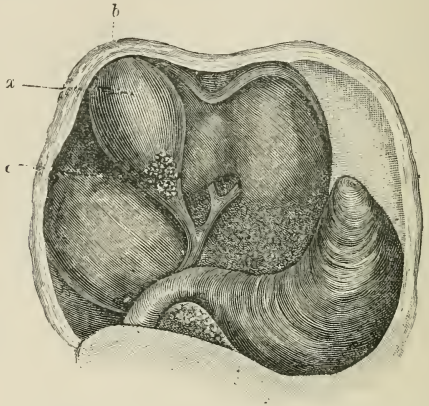


Fig. 27.—*a*, Gall-bladder so distended with bile (on account of duct obstruction) as to cause a slight elevation *(b)* of the superjacent abdominal parietes. *c*, Biliary concretions at mouth of cystic duct.

Although one cannot grasp the gall-bladder through the intact abdominal walls, yet as when it is distended with bile its fundus presses directly against them—sometimes even to such an extent as to elevate them slightly, as is represented in *Fig.* 27—there is no difficulty whatever in applying pressure to the fundus of the gall-bladder by the tips of the fingers pressed against the integuments immediately over it. And just as in the case of an india-rubber syringe it is easy to make it expel dirt from its nozzle when water is suddenly jerked out of it by manual pressure, digital pressure applied to the fundus of a distended gall-bladder is equally successful in making it expel its contents along the ducts into the intestines, in all cases where the obstructing body—be it inspissated bile, sand, gravel, or even a gall-stone—if sufficiently small to be able to be propelled by the bile along the ducts into the intestines (*Fig.* 28). Moreover from

the fact of the ducts being dilatable, even impacted concretions as large as hazel-nuts may be forced along them by daily, judiciously applied, slow and graduated pressure, especially when the dilating process is aided by the administration of medicines. There is always one point in favour of the operator, namely, that in cases where an obstruction to the flow of bile is caused by a biliary concretion, the gall-bladder is always more or less distended with fluid ; and this has a double advantage, for, firstly, it renders the situation of the organ more easily detected, and secondly, there is plenty of bile in it for the operator to push against the obstruction and thus induce its forcible extrusion from the duct.

It must be remembered that although a distended gall-bladder is

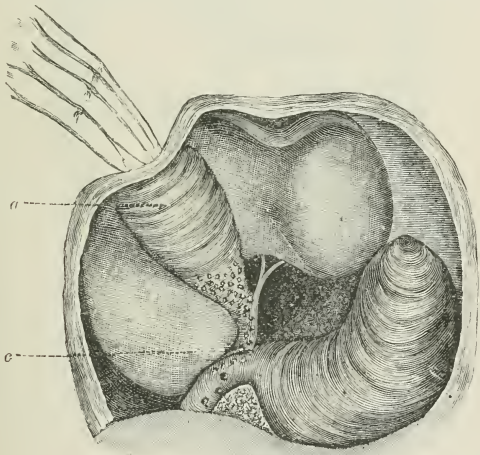


Fig. 28.—*a*, Distended gall-bladder being emptied of its contents by digital pressure on the abdominal walls. *b*, Biliary concretions being extruded from the orifice of the common bile duct into the intestines.

easily enough localized through thin abdominal parietes, its situation is not at all readily discoverable through fat ones, unless it be of large size. While, as is well known, a normal-sized gall-bladder is undetectable in either case.

In order to assist gentlemen in finding the gall-bladder, who are

anxious to practise the above described method of extruding gall-stones by digital pressure, we subjoin an anatomical plate illustrating its usual position in a healthy individual (*Fig.* 29). It is a copy of the woodcut given by Gaston (in his paper on Duodeno-cholecystostomy*), which is itself, again, a copy of Hinke's plate slightly modified. Although the normal situation of the gall-bladder is here truthfully represented, one must not expect always to find it in this situation when the liver is enlarged or otherwise diseased. For sometimes the

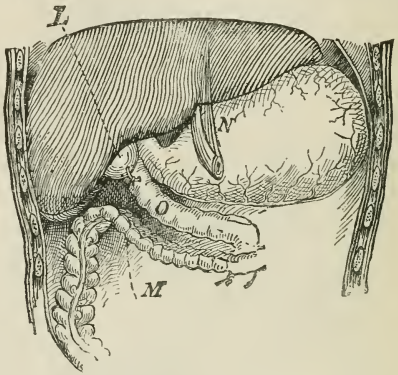


Fig. 29.—*L*, The normal size and position of the gall-bladder; *O*, Duodenum; *M*, The Colon; *N*, Suspensory ligament.

gall-bladder is found much nearer to, or much farther away from the mesial line. In a case we saw with Dr. Cook, of Forest Hill, although the distended gall-bladder was beautifully distinct to the touch, it was very much nearer to the mesial line and to the umbilicus than is here represented. This arose from the cause of the occlusion of the duct being an organic growth, which in developing had pushed the gall-bladder from its normal position.

We would further beg to remind our readers that a few failures need not discourage them, as human fingers, like human eyes require education; and that just as the trained eye of "the old salt" is not only able to detect on the horizon a vessel, but also to discover her rig, and probably even make a tolerably good guess at her tonnage, long before the uneducated eyes of the landsman can so much as

* "Brit'sh Medical Journal," 5th Feb., 1887.

perceive a dark speck in the distance, they are not to abandon their design on account of being at first unsuccessful. For, without doubt, perseverance and opportunity will, in the end, enable them to discover gall-bladders, equally as readily as the trained fingers of the expert do; and that too even through abdominal parietes so thick, that untrained hands cannot so much as make out the boundary of the solid liver through them. While, again, they will ultimately find that they will be able to extrude small impacted biliary concretions—be they in the shape of sand, gravel, or stones—from the bile duct into the duodenum with as much certainty and safety as they can pass a catheter through a stricture into a human urinary bladder. At the same time, for the sake of their patient's welfare as well as their own reputation, they must never forget to be as careful in the mode of operative procedure in the one case as they would be in the other, as neither operation is invariably unattended by danger. This is especially the case when the manipulative operation has been unfortunately delayed until the gall-stones have grown large and hard and, on account of prolonged pressure, begun to ulcerate through the tissues they have long pressed against.

GANGRENE. (See "Pulmonary Gangrene.")

GASTRIC CATARRH.

Synopsis.—(Vol. 1889.) **Kava-Kava**, grs. jss ter die in chronic catarrh (p. 50); **Lycopodium Tincture**, gtt. xx to xxx in gastric catarrh associated with excess of lithates in urine and flatulent distension of transverse colon (p, 52); **Pichi Fl. Ext.**, ♏xv to ʒj as stomachic tonic (p. 61).

GASTRIC ULCER.

Synopsis.—(Vol. 1888.) **Defibrinated Blood** (p. 26); **Hamamelis**, Tinct. ♏v to ʒj (p. 59).

(Vol. 1889, 261.) **Iron** (perchloride); **Hydrochloric Acid**; not to be used in anæmia; **Bicarbonate of Soda** and **Bismuth** form a mechanical coating for mucous membrane; but **Carlsbad, Ems,** and **Tarasp** waters are better. Washing out the stomach with **Common Salt** solution is useful in old cases. Lavage with solutions of **Sulphate, Chloride, Borate,** or **Bicarbonate of Soda,** ʒj or ij to the quart of warm water. If antiseptic or sedative solutions are required use **Resorcin,** 1%; **Boric Acid,** 1%; **Creasote,** 1%; **Carbon Disulphide Water** (j part of a solution containing xv grs. to the quart to ij parts water); **Charcoal Powder** (ij to iv tablespoonful); **Chloroform Water** (saturated solution), or **Bismuth Sublimate** (ij tablespoonfuls to the pint). N.B. **Resorcin** or **Carbolic Acid** must be carefully removed. **Amylene Hydrate,** iijss grammes as hypnotic in gastric ulcer (p. 13).

GLAUCOMA. *W. Lang, F.R.C.S.*

Snellen distinguishes between glaucoma posterior, with shallow anterior chamber, and glaucoma anterior with deep anterior chamber. In the former, myotics are of benefit; in the latter they do harm. Sclerotomy

is indicated when the tension is increased, and is best performed with the lance-shaped knife. Excision of the iris is of secondary importance, and should only be done where there is a tendency to prolapse, or liquid gathers behind the iris.

GLEET.

Synopsis.—(Vol. 1888.) **Chimaphila,** Liq. Ext. ♏j to x, or Tinct. ♏v to xx (p. 38); **Hydrastis** (p. 59); **Kava Kava** (p. 70).

GOITRE. (See also "Exophthalmic Goitre.") *P. Watson Williams, M.B.*

Kocher reporting on two hundred and fifty extirpations for goitre draws the following conclusions: (1,) Extirpation is indicated in malignant goitres, inflammation of the thyroid, and diffuse hypertrophies. It is contra-indicated if there is no healthy tissue; (2,) Enucleation is indicated in cystic goitres; (3,) Evacuation is indicated if there are isolated soft tumours; (4,) In some cases extirpation must be performed by resection of the tumour; (5,) Ligature of the thyroid gland is indicated in vascular goitres and Graves' disease.

Some time ago M. Mosetig von Moorhof highly recommended the injections of the ethereal solution of **Iodoform** in the treatment of goitrous tumours. Dr. Felix Terrier publishes a note in "Le Progrés Médical" for December 1, 1888, which is a further confirmation of the value of this treatment. The treatment was undertaken in a young man of robust health, seventeen years of age, in whom the goitre consisted of three tumours. The most voluminous was situated at the right side of the neck, and was the size of at least a hen's egg; the smallest, about the size of a hazel-nut, in front of the trachea, and the other in volume between these two, was situated on the left side. The tumours were very hard, but not adherent to the skin, and were movable during deglutition. Treatment was commenced by the injection of a five per cent. solution of iodoformed ether by means of a hypodermic syringe, one injection being made each day. At the end of three weeks, the neck had diminished about an inch in circumference. The subsequent treatment consisted in one hundred injections, extending over eight months, and, at the time of writing, Dr. Terrier states that the goitre was not quite completely cured, but that there only remained a small, hard lump about the size of a small nut in the place of the large tumour which had been originally there. The other tumours had entirely disappeared, not even the slightest particle remaining.

Weinbaum reports two cases of soft goitre permanently cured by **Electrolysis.** The treatment consisted in galvanic electricity, applied for from ten to fifteen minutes at a sitting, and supplied by a battery of twenty cells connected with two golden needles, which were thrust several millimetres deep into the tumour at two diametrically opposite

spots. Only moderately strong currents were used. In all, one hundred and fifty sittings were made in the course of eight months. The tumour gradually dwindled away. When seen lately, about a year after the end of the treatment, the patient was in flourishing health; not a trace of the swelling could be detected. In the second case only a slight tumefaction about the right lobe remained after fifty sittings. Dr. Weinbaum tried the same plan also in a case of dense fibrous goitre, but failed to obtain anything beyond a trifling diminution of the cervical circumference, though more than two hundred sittings had been made.

Duncan has treated fourteen cases by Electrolysis, six were cured, all the others are improving under the treatment with one exception.

REFERENCES.—Weinbaum, "Vratch," Nov. 27, 1888; "Brit. Med. Jour.," Nov. 3, 1880; "Ther. Gaz.," Jan. 15, 1889; "Journ. of Laryng.," Apr., 1889; "Ann. of Surg.," Oct., 1888.

GONORRHŒA. (See "Urethra, Diseases of.")

Synopsis.—(Vol. 1888.) **Arbutin** (p. 17); **Hydrastis** (p. 60); **Hamamelis** (p. 58); **Kava Kava** (p. 70); **Sandal Oil** (p. 91); **Thallium** (p. 103). Hot injections of **Hydrarg. Perchlor.** 1 in 60,000 to 1 in 40,000, said to be more useful in subacute and chronic cases; **Sulphate of Thallin** in bougies, consisting of 2% and 5% of **Thallin** with **Gelatin** and **Glycerine**; **Thallin** is also used as injection, 1 to 5%, or in soluble spring bougie, 2½ to 5%. **Creolin** injection, 5 to 8%, applied through a hollow sound; **Pyridine, Iodised Vapor; Iodoform,** finely powdered, and suspended in **Almond Oil,** as injection; also a mixture of **Olive** and **Eucalyptus Oils.**

GONORRHŒA IN WOMEN. (See also "Uterine Appendages.")

John W. Taylor, F.R.C.S.

The importance of this subject is becoming more and more appreciated. Gonorrhœa is undoubtedly the main cause of that inflammatory disease of the uterine appendages which is so common a feature in the gynæcological practice of our large towns. As such it is a grave disease, and occasionally (as pyosalpinx) a fatal disease. The detection and treatment of gonorrhœa in its early stages are accordingly worthy of the interest and pains of every practitioner.

The following method of examining a suspected discharge for gonococci is copied from Dr. Sinclair's book on "Gonorrhœal Infection in Women": "A thin cover-glass, carefully cleaned, is held ready in a pair of suitable forceps, and a small drop of the suspected pus is spread over a small area of its surface. This is quickly dried by holding it in the current of hot air high above the flame of a spirit lamp. Over the dry matter on the glass a drop of a concentrated alcoholic solution of methyl violet is let fall and allowed to spread. After a momentary pause, the superfluous solution is got rid of by

turning the cover-glass on edge and bringing it in contact with some clean blotting paper. The glass, now covered with a thin film of the dye solution, is again raised for a few seconds above the spirit lamp, not long enough for it to dry. The dye is next washed away, as well as it can be, by bringing the cover-glass under a stream of distilled water from a wash-bottle. The cover-glass with the adherent stained film of discharge has now to be dried. The drop of water which adheres to it can be got rid of by bringing the object edgewise on to a piece of blotting paper as before, but still the glass remains wet, and even in the heat of the spirit lamp it will, perhaps, take a minute to dry."

"A small drop of Canada balsam, dissolved in benzol, is now let fall upon the centre of the cover-glass, which is at once applied to the slide, previously cleaned and warmed. The preparation is now complete and ready for examination."

With a good microscope having a $\frac{1}{12}$th immersion lens, the diplococci may be seen in colonies or groups within the leucocytes or pus cells of which the discharge is composed.

Specimens prepared by this method may be kept almost indefinitely, so that any practitioner not possessing the necessary microscopical apparatus, may reserve them for subsequent examination at any convenient opportunity.

The gonococcus may be generally found in the early stages of gonorrhœa in men; in women it is often exceedingly difficult to find.

What is the best Method of treating Gonorrhœa in Women? The treatment by vaginal suppositories is efficacious and free from many objections which may be urged against frequent and forcible injections. **Acetate of Lead** (gr. v.) and **Opium** (gr. jss) during the acute stages, and **Carbolic Acid** (gr. j.), **Iodoform** (gr. iij.), **Alum** (gr. x.), and **Iron** (Ferri. Sulph. Exsic., gr. jss) in the more chronic stages, are among the most useful formulæ to use.

Researches on the bacteriology of the female genital tract (see "Annual," 1889, p. 486) are almost uniform in regarding the internal os as the limit above which micro-organisms are rarely found. Yet gonorrhœal salpingitis is undoubtedly caused by direct extension of the infective disease above this area. Every method of examination or treatment by which contagion is liable to be carried from the vagina higher up the genital tract, should therefore be avoided. The use of the sound is undoubtedly dangerous in all cases of gonorrhœal vaginitis.

Is Gleet in the Man liable to produce Gonorrhœal Inflammation in the Woman? So long as the gonococcus is present in a discharge, so long

may it set up specific inflammation in any favourable locality to which it may be carried. It is believed by many that women may in this way contract serious gonorrhœal inflammation of the tubes and pelvic peritoneum without suffering at any time from a marked attack of acute specific vaginitis.

So long as a gleet remains, permission to marry should be withheld—at all events, unless repeated examination had failed to find any trace of the diplococcus.

GOUT.

The treatment of this affection has been very fully considered in our previous issues, and the literature of the past year has added nothing to our practical knowledge. The value of colchicin in gouty affections of the eye is referred to under "Eye."

Gout in the Throat. *P. Watson Williams, M.B.*

Sir Morell Mackenzie draws attention to true gouty affections in the throat. He gives four typical cases: one was an acute œdema of the uvula disappearing upon sudden development of an ordinary attack of podagra; the second a chronic inflammation of the posterior pillars of the fauces; the third a gouty deposit around the crico-arytenoid joints on both sides, causing permanent dysphonia; and the fourth a gouty inflammation producing fungous ulcerations of the left ventricular band resembling cancer.

The second case not yielding to the usual treatment, and not being improved by ablation of the uvula, the urine was examined and showed a considerable deficiency in the amount of uric acid passed in the twenty-four hours. It was treated as a case of gout, with **Colchicum**, etc., with perfect success. The third case was not relieved; the fourth was cured by drinking the waters of Wiesbaden. Dr. Krishaber, of Paris, had diagnosed this case as cancerous, and Sir M. Mackenzie candidly reports that "the case was one extraordinarily like cancer, that he thought it right to inform his patient of his suspicions, and told him that extirpation of the larynx might be performed."

Considering that cancer is in most cases easily recognizable, it is very remarkable that a case of gout should have been mistaken for malignant disease by two practitioners of large experience, and the fact certainly points to the probability that other less remarkable cases of gout may occasionally be overlooked or mistaken for other diseases.

REFERENCE.—"Jour. of Laryng.," Aug., 1889.

Gout, Senile. (See "Arthritis.")

GRANULAR LIDS. *W. Lang, F.R.C.S.*

True states that in certain chronic cases of granular lids, accompanied by epiphora, nothing but extirpation of the lachrymal gland suffices to cure both conditions. It is especially indicated where there is stenosis of the punctum lacrymalia.

In old chronic cases of granular lids with pannus, Arnants finds that the bi-weekly brushing of the everted lids with a solution of **Corrosive Sublimate,** 1 in 100, is followed by rapid disappearance of the pannus. A 5 per cent. solution of **Cocaine** is used before the application of the mercury. The patient is also given a solution of the sublimate, 1 in 500, to drop into the eye three times a day. The ensuing smarting soon passes off, and may be diminished by the previous use of cocaine; or, after applying cocaine to the eye, the upper lid is everted, the large soft granulations squeezed out, the eye cleaned from clot and débris, and the following powder dusted over the lid: Tannic acid, 1 part; boric acid, 3 parts, each in very fine powder; mix. The powder is dusted on the palpebral conjunctiva once or twice a day for one to four weeks, when the lids will be found healed and smooth.

GRAVES' DISEASE. (See also "Exophthalmic Goitre" and "Goitre.") *W. Lang, F.R.C.S.*

Eulenburg considers this disease to be due to an exhaustion of the nervous system, a kind of neurasthenia, and treatment in conformity with this idea is always very satisfactory. He separates the patient from her family, prescribes mountain air, salt and iron baths, and especially electric baths.

Local applications of electricity are also very successful. Occasionally Weir Mitchell's diet is found very useful.

Synopsis.—(Vol. 1888, p. 97.) **Sparteine.**

GUMMA, CEREBRAL. (See "Brain.")

HÆMATIDROSIS.

Synopsis.—(Vol. 1889, p. 268.)—**Ergot** (Bulkeley); **Abstraction of Blood** (Anderson); **Belladonna.**

HÆMATO-SALPINX. (See "Uterine Appendages.")

HÆMATURIA. (See "Bladder, Electric Cystoscopy of.")

Synopsis.—(Vol. 1889. p. 26.) **Ext. Bursæ Pastoris Liq.,** ♏x to xx.

HÆMOGLOBINURIA.

M. Lépine in a recent communication to the "Soc. des Sciences Méd.," at Lyons, proposed the separation of cases of hæmoglobinuria into two classes, viz.: (1,) Those which depended on free hæmoglobin in the blood; and (2,) Those of renal origin, depending on renal congestion and rupture of vessels in the kidney. If there was slight

rupture of vessels in the glomeruli, and a few corpuscles escaped into the capsule of Bowman, these were broken up by the serous fluid which they found there, and their components were passed with the urine. He illustrated the possible local origin in the kidney without general ill-health, by an experiment on a healthy dog. A cannula was introduced into each ureter, and one filled with sterilised water, the other with ammoniacal urine, the pressure in the two being equal, namely, 60 cm. This condition was maintained for three hours, and then the urine drawn off with the cannulæ. That on the side of the water was normal, that on the other side contained abundant hæmoglobin, but no blood corpuscles. Now, as ammoniacal urine preserves any corpuscles that enter it, the inference would be that the corpuscles in this case were not broken up in the general circulation but immediately before entering the renal tubules. ("Lyon Méd.," Sept. 9th, 1888, p. 55.)

HÆMOPTYSIS.

Synopsis.—(Vol. 1888.) **Acalypha**, mi. to iv. (p. 1); **Terpin Hydrate** (p. 102).

(Vol. 1889.) **Geranium Maculatum**, grs. x. to xl. (p. 42); **Lamium Album.** ℞ Tinct. Flor. Lamii Alb. (about) ʒiv; Syr. Sacchari ʒij; Aq. dest. ʒix, M. Half a teaspoonful half-hourly until the bleeding ceases, then a tablespoonful every four hours until all symptoms disappear (p. 51).

HÆMORRHAGE. (See special articles "Brain," "Bladder," etc.)

HÆMORRHOIDS. (See "Piles.")

HAY-FEVER. *Greville MacDonald, M.D.*

"*Is hay-fever curable?*" This question is still unanswered, in spite of the assurances given by rhinologists. That many cases admit of practical cure there can be no doubt, while even more are proved susceptible of amelioration. Where we find obvious and obstructing hypertrophies of the septum or turbinals, or polypi, much may be hoped for from their eradication. Yet the most marked of such cases, even when objectively cured, still often retain the highly sensitive mucous membrane so characteristic of the disease.

Sajous, of Philadelphia, advocates most strongly the exploration of the sensitive spots, and their immediate destruction with the electric cautery, and although there be many who have experienced no relief even in the most expert hands, we are satisfied, from our own cases, that the method is often of the highest value. Sir Morell Mackenzie discountenances it strongly, though the majority of Americans endorse it. Dr. Coomes, of Kentucky, however, believes it impossible to cure hay-fever, though large areas of mucous membrane be destroyed. Dr. F. W. Hinkel, of New York, advocates the use of **Antipyrin** (4 per

cent.) as a spray in preference to cocaine. The prolonged use of the latter, be it noted, is generally highly injurious to the nervous system.

REFERENCES.—Sajous, "Diseases of the Throat and Nose," Philadelphia, 1888; Hinkel, "New York Med. Jour."; Coomes, "Kentucky State Med. Soc.," July, 1888.

Synopsis.—(Vol. 1888, p. 287.) To exhaust the irritability of the mucous membrane, R Glycer. Ac. Carbol. ʒj; Quinine; Hydrochlor. ʒj; Perchloride of Mercury (1:2000), prepared by heat. This is applied with a brush to each nostril, after cleansing them with **Boroglyceride** Sol., ʒj to Oj (Clark).

(Vol. 1889, p. 272.) Instillation and bathing conjunctiva with **Corrosive Sublimate**, 1 to 3000, fourteen days before the regular period of return, or **Boracic Acid** solution, used similarly, and if some irritation still remain, dabbing of margins of lids and inner canthus with **Cocaine**, 1%. **Cocaine Tabloids** gently inserted into nose; pungent inhalations of strong **Ammonia, Carbolic Acid, Camphor,** or **Iodine,** the last being most effectual, using **Linimentum Iodi,** which is sniffed when attacks come on. Some prefer **Terebene, Pinol,** or **Eucalyptus. Creasote,** ♏j in a pint of water, inhaling the steam; **Camphor,** saturated solution in **Alcohol,** ♏ij to iij, taken on sugar every ten minutes, until attack ceases; **Nitre Papers,** made by soaking six thicknesses of blotting paper in saturated solution of **Nitrate** and **Chlorate of Potash,** and sprinkled when dry with **Essence of Camphor, Tinct. Benzoini Co., Tinct. Sumbul** or **Stramonium,** and then burnt. **Himrod's Powder, Strong Black Coffee,** taken at onset; **Effervescing Citrate of Caffeine. Quinine** as douche or spray in hay fever—useless in paroxysmal sneezing; **Hazeline,** ♏xx t.i.d., or sniffed up nostrils, useful in hay fever and sneezing; **Iodides** alone, or with **Syr. Pruni Virginiæ; Iodine Tinct.,** ♏xx to xxx to a pint of boiling water, and inhaled for itching of nose or inner canthus, sneezing, running at nose and eyes of clear watery fluid, and severe frontal headache; **Arsenic** in paroxysmal sneezing, occurring in morning and often during the day, running at eyes and nose, frontal headache and itching at orifice of nostrils, or when food excites an attack, or when in children breathing is difficult after acute bronchitis. **Linimentum Aconiti** or **Ung. Aconitiæ** applied to itching or irritating spots; **Bidens Bipinnata Decoction** for hay asthma (p. 24).

HEADACHE AND MIGRAINE. *Charles L. Dana, M.D., New York.*

Much has been written in the past year upon the subject of headache, by which in many cases are included, no doubt, head-neuralgias, migraine, and ordinary diffuse headaches. **Caffein** and **Salicylates** are recommended independently in migraine by Dr. Jas. Little and Dr. E. J. Overend. **Oil of Eucalyptus** is recommended for paroxysmal headache, in 5 minim doses, four times daily, by Drs. Morris J. Lewis and G. E. de Schweinitz, in the "Med. News." **Cascara Sagrada** in teaspoonful doses, taken at the onset of an attack of migraine, will ward it off in some cases, according to Dr. S. E. Morgan, in the "Med. Age."

Low-pressure and High-pressure Headaches.—An interesting and scientific contribution to the pathology and therapy of headache has been made by Mr. E. L. Lloyd Jones, in the "Practitioner." The author observed that certain patients suffering from headache are

relieved while sipping cold water. He found that this process accelerated the pulse and raised arterial tension. After the sipping the pulse and tension fall for about half an hour, then, if enough water be taken, there is a secondary rise from ingestion of fluid. He finds that headaches due to low arterial pressure in the brain are, as a rule, relieved by sipping water, while those in which there is increase of arterial pressure are made worse. Dr. Jones divides headaches into those of the "low-pressure" and "high-pressure" type. With regard to the first he says: In acute cases, *e.g.*, the toxic headaches from alcohol and tobacco, exercise and food, are potent remedies. Relief is obtained from cardiac stimulants such as the following:—

℞ Spiritus Ammon. Aromat. ℥ss | Aquam ad ℥j
Spiritus Chloroformi ♏x |

Antypirin in small doses (gr. iii), repeated if necessary, is also useful. In more chronic (recurrent) cases prolonged treatment by drugs is often necessary, and the author recommends especially small doses of **Digitalis.**

In acute high-pressure headaches the bowels must be kept open, but purging is not, as a rule, serviceable. The **Nitrite of Amyl** carefully administered in a very dilute state is very useful. More advantageous perhaps, because the dose can be more easily regulated, is **Nitroglycerine.** It is useful alike in acute and recurrent cases. In anæmic girls with severe headache the author finds that it gives great relief.

In recurrent high-pressure headaches alkalies are found most beneficial, but many of these occur in anæmic young women, and in these cases **Iron** is also indicated. It is best not to give the iron alone, but in combination with an alkaline carbonate, for it has otherwise a tendency to increase headache. Such a mixture as the following is found useful:—

℞. Sodii Bicarbonatis gr. x | Spiritus Chloroformi ♏x
Ferri et Ammonii Citratis gr. v | Aquam Menthæ Viridis ad ℥i
M. Fiat haustus, ter die ante cibos semihora sumendus.

In persons of the uric acid diathesis a mixture containing 20 grains of **Citrate of Potassium,** with 10 grains of **Salicylate of Sodium,** is recommended.

Dr. A. Haig continues his studies on the relation of uric-acid to migraines and other paroxysmal neuroses. His theory in general is that uric-acid gradually stores itself up in the liver and spleen until finally a crisis comes; then the organs cease to manufacture urea and uric-acid, the blood increases in alkalinity, the stored up uric-acid rushes into the circulation, and we have headache. The good effects of **Salicylic Acid,** and the salicylates generally, in migraine

are due to the circumstance that they facilitate the excretion of uric-acid, and thus prevent the retention of excessive amounts within the body. According to this theory also the salicylates ought to prevent migraine.

Dr. J. J. Chisolm calls attention to the importance of correcting slight degrees of astigmatism for the relief of headache and eye pains. He speaks of the great value of a 0·25 D cylinder.

Chronic functional headaches, not migrainous, are discussed by Dr. C. L. Dana ("Med. News," Mar. 16, 1889). The author says: (1,) Pains in the head are either (*a*,) neuralgias, (*b*,) migraines, or (*c*,) ordinary headaches; (2,) The seat of headaches is always in or referred to the trigeminus, vagus, or four upper cervical nerves; (3,) Headaches (*c*,) are seated in or referred to the periphery of the nerves in question; neuralgia (*a*,) is seated in the trunks or nerve centres; migraine (*b*,) is a periodical discharging neurosis, affecting motor, vaso-motor, secretory, as well as one or more cranial sensory nerves; (4,) The dura mater is the most frquent seat of headache; (5,) The great headache ages are from eight to twenty-five, and again from thirty-five to forty-five; childhood and old age are exempt; (6,) The chronic functional, non-migrainous headaches may be classified as hæmic, including diathetic forms, toxic, dyspeptic, neurotic, reflex. General directions are given as to treatment, based on etiological considerations.

REFERENCES.—Dublin "Med. Jour.," June, 1888; "Pacific Med. Jour."; "Med. News," July 20, 1889; "Pract.," May, 1889; "Med. Rec.," Mar. 30, 1889; "Med. News," Mar. 16, 1889; "Jour. of Amer. Med. Asso.," Oct. 27, 1888.

Synopsis.—(Vol. 1888, p. 83.) **Ammonium Picrate**, gr. ½ q.d., in malarial headaches.

(Vol. 1889, p. 274.) **Salicylate of Soda**, gr. xx, with **Effervescing Citrate of Caffeine**, grs. ij, every two hours, if necessary, in migraine; **Cysticine**, gr. $\frac{1}{25}$ to $\frac{1}{12}$, hypodermically (?); **Nitro-muriatic Acid Dil.**, gtt. xl to lx, taken in two doses within the hour; or a glass of very strong **Lemonade**, in **Migraine**, with large excretion of **Uric Acid**. **Menthol**, grs. v to xv, in wineglassful of hot water, for migraine and also headaches and supra-orbital neuralgias of anæmia and neurasthenia; it may be usefully combined with **Antifebrin** or **Antipyrin** and **Saffrol**. Oertel's method for treatment of circulatory disorders is useful in intense chronic headaches in the obese with fatty heart; **Nitro-Glycerine**, ♏j to ij of 1% solution, when pain is paroxysmal and face pallid; **Antipyrin**; Fresh Liq. Ext. of Indian Hemp.

HEART (Diseases of the).

Jas. R. Leaming, M.D.
F. W. Jackson, M.D.

PATHOLOGY.—A notable and valuable paper has recently been published by Dr. Francis Delafield on "Chronic Endocarditis." In introducing his subject he speaks of it as an "ordinary disease," "few

are more common than is chronic endocarditis," "it seems evident that nearly all the most important symptoms of chronic endocarditis are due to the disturbance produced in the distribution of the blood throughout the body." The problem before us, therefore, is to determine why, in some cases of chronic endocarditis there are disturbances of the circulation, and in other cases there are not. The causes act singly or together, as in the endocarditis, the dilatation and hypertrophy of the ventricles, the inflammation or degeneration of the walls of the heart, the inflammation of the coronary arteries, the abnormal heart action, the associated pulmonary emphysema, chronic endocarditis, and chronic Bright's disease.

He confines his consideration of these causes, to "Endocarditis," "The abnormal heart-action," and to "The secondary and complicating changes in the kidneys," as the most important.

(1,) *The Endocarditis.*—Some suffer from chronic inflammation, others from deformity resulting from a past inflammation. But the deformity may lead to progressive changes in the cavities and walls of the heart, especially if the changes in the valves are also progressive.

Chronic endocarditis may follow the acute attack, or it may be developed after a long interval in valves damaged by an old attack, or it may be chronic from the first. Especially is this so in children. Cardiac symptoms may develop late in life with the history of acute endocarditis in childhood. In adults the gradual development of one symptom after another may occur so slowly that we can hardly date the beginning of the disease.

When it has once commenced it has a natural tendency to persist and to involve other portions of the endocarditis. But it is possible for the disease to stop at any time, and the tissues then to undergo no further change.

Chronic endocarditis is a formation of new tissues, but without exudation. (?) There may be considerable growth of cells, at the same time death of cells, so that the inflamed endocardium is thickened in some places, ulcerated in others, and on the rough places thus made, thrombi are formed.

This is the most active and dangerous form of the disease. In the chronic form the cells do not die, the basement substance is thickened, the surface of the endocardium is somewhat thickened; there may be vegetations, but no thrombi.

In either form there may be degeneration or calcification of the thrombi or the endocardium. The chronic form of years may develop actively in the same valve or in the others. A large number of the active cases run their course in six or seven weeks. The symptoms

are pronounced: disturbed heart-action, delirium, convulsions, paraplegia, cough, hæmoptysis, dyspnœa, nausea, and vomiting, dropsy, loss of flesh and strength, and anæmia, with rise of temperature. They are apt to get rapidly worse. Rest in bed, the use of cold or of counter-irritation over the heart, with out-door life and regulated exercise are beneficial.

(2,) *Abnormal Heart Action.*—It is possible for a chronic endocarditis to run its entire course with a perfectly regular action of the heart. This, however, is the exception. The disturbance is the most important feature of the disease, and furnishes the principal indication for treatment, as caused by inflammation of the endocardium, by stenosis, dilatation and hypertrophy of the ventricles, chronic myocarditis, and disease of the coronary arteries and contraction of the smaller arteries and arterial tension. Of this latter condition Prof. Delafield states that "although a frequent complication of endocarditis, nephritis, endarteritis and emphysema, and occurring as independent in some cases of angina pectoris, it is yet something of which our knowledge is imperfect." Whether contaminated blood irritates the arteries, whether the nervous centres are irritated by contaminated blood, or in what way the contraction of the arteries is produced, we do not know, but it lasts for hours, days, or months. There may be but one attack or there may be many. If many, the muscular coat of the arteries becomes thickened, and the heart's action is permanently changed, it becomes rapid, forcible, feeble, or tumultuous, and the heart is enlarged. When the attack subsides the symptoms disappear, and the patient again feels well. But in time the attacks are more frequent and more obstinate, and complications commence, slight pleurisy (dry?), or pericarditis without apparent cause, and extreme and intractable dyspnœa, with palpitation, continues to the end. At first these attacks are easily relieved by **Nitrite of Amyl, Chloral Hydrate, Nitro-Glycerine, Opium, Potassium Iodide.** They are better for a well-regulated out-door life, but towards the end quiet and perfect rest are necessary.

"*Unknown causes,*" which apparently act through the nerves which regulate the arteries of the heart, Prof. Delafield speaks of several varieties, and it is only by the results of treatment that we can discriminate how much of the disturbance of the heart's action is due to the valvular lesion, and how much to nervous influences. Although these patients have endocarditis, yet it is really the abnormal heart action which makes them ill and calls for treatment. Some are easily managed, but others do not improve. There are occasional cases in which the heart's action becomes very bad and the patients become

very feeble and die. After death we find but moderate changes in the valves, *and no changes in the walls of the heart.*

(3,) *The secondary and complicated changes in the kidney.*—Of the persons who suffer from chronic endocarditis, a large number never have any complicating disease of the kidney.(?) In the persons who die from endocarditis it is rare to find normal kidneys. The most certain criterion is the autopsy. During life albumen and casts are often absent, but the quantity of the urine, its specific gravity, and the proportion of urea to the ounce must be determined. Advanced changes in the kidneys often exist when a superficial examiner has pronounced them normal. In persons who die from chronic endocarditis we find chronic congestion of the kidney, chronic degeneration of the kidney and chronic nephritis. The distinction between chronic congestion and chronic degeneration of the kidney is, that in chronic congestion, the size is medium or large. The weight is increased, they are hard, uniformly congested, surfaces smooth, the epithelium of the cortex tubes opaque, flattened or swollen, the glomeruli show a dilatation of the capillaries with more or less thickening of their walls and swelling of the cells, which cover the walls. In the stroma there is nothing but some exaggeration of the subcapsula areas of connective tissues. The arteries are normal, the pyramid veins are congested and sometimes dilated. The effect of congestion of the kidneys is to diminish the quantity of urine. In chronic degeneration of the kidneys, there is greater increase in size and weight, both together weighing from sixteen to twenty ounces. The surfaces are smooth ; the cortical portion is thickened, of pink or white colour ; the pyramids are red. The gross appearance is that of the large white kidney. The quantity of the urine varies with the changes in the action of the heart, sometimes abundant, sometimes scanty, sometimes suppressed. The specific gravity is not diminished nor is the proportion of urea to the ounce decreased. Albumen and casts in small quantities are more frequently present than with chronic congestion. This kidney lesion is more serious than chronic congestion, for it increases the symptoms of endocarditis, especially in nutrition and anæmia.

Chronic inflammation or chronic nephritis may follow chronic congestion or chronic degeneration as a result of the endocarditis, or it may develop as an independent inflammation, and then become an associated, and not a secondary lesion. In chronic nephritis the quantity of urine varies very much in the same patient, sometimes above and sometimes below the normal. The specific gravity falls to 1,020 or to 1,016. The proportion of urea to the ounce is diminished.

The patients are specially liable to spasmodic dyspnœa, and to loss of flesh and strength. When chronic nephritis follows chronic degeneration of the kidney the patients exhibit anæmia and dropsy in a marked degree, and get worse rapidly.

Prof. Delafield continues at length the consideration of the pathology of the kidneys in connection with that of the heart, as the two are practically inseparable, but as we are confined to the heart by limitation, we must close the discussion with but a general reference to its coincident relationships, and affinities with other organs, and proceed with some remarks.

Our author considers chronic endocarditis from the standpoint of the pathologist. Consequently when he speaks of it as an "ordinary disease," "that few are more common," it is as a pathologist, and not as a clinician or diagnostician.

The advance in acoustic knowledge and its application to physical signs make it necessary that there should be a thorough revision of the rules for diagnosis for greater accuracy in the practitioner. This would throw out as mistaken diagnosis all of those cases whose hearts have been condemned from arbitrary signs, and yet "who enjoy good health," "can follow laborious occupations, and are often ignorant that they have any disease."

It certainly would be better that such patients should remain ignorant of what (being mistaken diagnosis), might do them infinite harm needlessly. Until physical signs invariably point with certainty to the exact pathological condition, the opinion of the inexpert examiner may do great harm. It is safe to consider as harmless, signs which give no discomfort or cause no disability.

A cardiac murmur, especially at the apex beat area, is not sufficient evidence, of itself, to condemn the heart, for it is very certain that such frequently are present when there is no heart lesion. We cannot, therefore, admit that chronic endocarditis is common or ordinary. Fortunately it is uncommon for it is disabling and distressing.

The abnormal heart action with arterial tension and dyspnœa, which is graphically described, is not of entirely unknown causes. It has a functional or nervous element which is the cause of its periodic attacks. But adhesions of the pericardial sac to the lung is frequently associated with abnormal heart action. But in autopsies, where there has been violent heart action and palpitation suddenly commencing and suddenly ending, a tongue-like adhesion has been found between the heart and pericardium. The frequency of the coincidence has led me to predict that an autopsy, where this "palpitation" has existed commencing suddenly and stopping suddenly,

would disclose a lengthened tongue of adhesion between the heart and pericardum. Ordinarily the adhesion is innocuous, but let an unusual cause as violent exertion, or emotion or indigestion operate, and the heart will seemingly take fright and tire itself out in violent action and then stop, and go on afterwards in regular order.

At a meeting of the London Clinical Society in Dec., 1888, Dr. Oliver drew attention to *Acute Gastro-Enteritis* as a not infrequent cause of the rapidly fatal termination of cardiac disease. He related several such cases which had come under his notice. His patients were all men, were upwards of thirty years of age, and in none of them, either from their previous history or during the course of their illness, could anything be found that would lead one to suspect that death would be induced by the setting up of a rapidly fatal form of gastro-enteritis. In all, the symptoms were of an acute character; they frequently developed very quickly, and death, preceded by collapse, occurred within a few hours or a few days. The first symptoms complained of were pain in the region of the stomach and vomiting. In these cases the stomach was found remarkedly red and inflamed in patches, without there being much aortic or mitral regurgitation (and, consequently, not chronic congestion of the stomach?). Neither had the gastritis come from the drugs used. It appeared to him to come reflexly from the heart itself.

Dr. John S. Ely narrates an interesting case of a patient who died of malignant endocarditis, and in whom no ordinary source of infection being discovered, the urethra was examined with the result of finding pus and inflammation along this passage; and microscopic examination of this part, together with the pus, resulted in the discovery of chains and clusters of micrococci, which were similar morphologically and in staining to those found in the internal organs. It was thought that the malignant endocarditis, with the attendant changes in the other organs, could be attributed to the presence of the staphylococcus pyogenes aureus and the streptococcus pyogenes, and that very likely these organisms gained entrance to the general system through the urethra. A few other cases of a similar character have been put on record, and although enough has not yet been done to verify the hypothesis of a source of infection in malignant endocarditis being through the urethra, yet the subject is interesting and suggestive.

Among the most startling and radical departures from long-accepted views is the statement by Germain Sée, that he regards all diseases of the heart as *non-distinct*. "It is the same affection presenting itself under different aspects." He regards the endo-

carditis, whether acute, sub-acute, ulcerative, or vegetative, *as always parasitic*, and consequently this view leads to the no less revolutionary deduction of the negation of their inflammatory nature. He considers that under the latent, sometimes remote, influence of a specific disease, especially of articular or chronic rheumatism, the endocardium is exposed to the action of the microbe, which is easily defined in this part, although not so regularly recognized in the joints. At other times the cause is a typhoid fever, or an attack of diphtheria, long forgotten, scarlatina, infectious pneumonia, or even syphilis. The only exception which he makes to this parasitic origin of valvular or myocardial disease is in the case of chronic affections of the aortic orifice in the oed, which result from fatty, atheromatous and sclerous changes in the arteries. The aortic changes in the young are also parasitic.

It is not probable that many of even the most ardent bacteriologists will as yet accept these views of M. Sée. The claims of Jaccond, of the bacterial origin of rheumatism even have not been supported by many observers, and certainly the claims of the bacterial origin of chronic or subacute endocarditis are not substantiated to any extent as yet. That *Malignant Endocarditis* is an acute infectious disease there can be no doubt, but here all the conditions are different from that of an ordinary endocarditis, such as runs a slow course and is attended with changes in the valves and in the heart muscle.

Fränkel has added some interesting observations upon the subject of *Cardiac Asthma.* We may distinguish two forms of cardiac dyspnœa, the *Continual* and the *Asthmatic.* The asthma is seen most typically in hypertrophy of the left ventricle with abnormal resistance of the blood vessels resulting from arterio-sclerosis. This usually comes on at night and quite suddenly ; the lungs are full of coarse *râles* and the attack resembles bronchial asthma, but may be distinguished by the high tension of the vessels, the absence of expiratory dyspnœa, and often by the discovery of a dilated left ventricle, though this is not always easily detected, owing to an increase in the volume of the lungs. This enlargement is due to the fact that, through the narrowing of the arteries, the blood is driven into the lungs and the left auricle. Hence there is permanent engorgement of the pulmonary circulation, even when there is complete compensation. These sudden asthmatic attacks are probably due to sudden temporary insufficiency of the left ventricle, brought about by psychic emotion, increased catarrh, or some other cause. Autopsies have shown that the heart muscle is of normal structure, and it would therefore seem likely that the failure is due to paralysis of the cardiac nerves or ganglia.

In the treatment of this condition Fränkel recommends the combination of **Morphia** and **Digitalis**.

He does not believe in uræmic dyspnœa, but believes it to be simply a cardiac dyspnœa having nothing directly to do with uræmia; a view which the writer cannot accept. Cases of purely renal dyspnœa are too common and too well marked to be overlooked. That such attacks are due to contractions of the smaller arteries alone, without other evidences of uræmia, is perfectly true, but such increased tension in the arteries is frequently found without marked change in the heart, and is to be regarded as part of the morbid changes which are associated with chronic nephritis, and not with the condition of the heart alone.

The statement of Fränkel, also, that the increase in size of the left ventricle is not easily detected owing to increase of volume of the lungs, the writer would think susceptible of some modification. Enlargement of the heart can always be determined by the proper application of percussion, and especially of auscultatory percussion, by which the change in size of the heart is readily to be detected, whatever the condition of the over-lying lung. Without the physical evidence of enlargement of the organ, the diagnosis of valvular diseæse of the heart, at least, cannot be made with any degree of certainty, and therefore the practice of mapping out the area of deep cardiac dulness should be a matter of routine in all cases where the evidences of enlargement are not distinct to the eye or to the touch.

Diagnosis.—We would remind our readers of our views in regard to the preference of the ear alone over the stethoscope or other artificial aid to auscultation, and urge the application of the temporal bone rather than the auditory meatus directly to the sonorous object. For accuracy, delicacy and freedom from acoustic imperfection, or injury from outside causes, nothing equals the temporal bone of the head, placed against the sonorous body, so that the sound vibrations may pass directly into it and to the organ of hearing. One may have occlusions of the Eustachian tube, and the hearing will be impaired, or there may be injury of the drum, and the person may be deaf, but if he is accustomed to receive sound impressions from the vibrating bodies directly into the temporal bone, he will not lose his power of auscultation because he is deaf by injury of the drum or through age. The whole side of the head is sensitive to direct vibrations delivered directly from a sonorous body. But the most sensitive part is in front and just above the external ear. Here, in this way, the nicest discriminations of sound can be made, and, under the law of acoustics, correct diagnosis.

In regard to the connection between changes in the media of the conduction of sound vibrations and cardiac murmurs, our views (which are based upon acoustic laws) are equally novel and interesting. Indirect conduction of sound takes place when there are adhesions of parts to parts adjacent, as of the pericardial sac to the lung, and the lung to the chest walls, when the heart sounds will be heard at the site of the adhesion of the lung to the chest wall, although the origin of the murmur may be in another direction and a long way off, and yet it will seem to originate directly under the stethoscope, which fact may give rise to false diagnosis.

Most of us have been in the habit of regarding the point of maximum intensity of a murmur as a valuable guide to the pathological condition of the heart, but we are of opinion that this is not so ; the locality of the murmur in the chest wall may be no guide as to the local mechanism or origin of the sound. In the same way murmurs may be produced without there being any lesion of the heart whatsoever, the normal heart sounds being transmitted to the chest wall by adhesions between the pericardium and the pleura, and the lung and the chest wall, and these appearing as murmurs, which might deceive the very elect were it not for the continuance of the perfect rhythm of the heart's cycle.

If the heart be acting in perfect rhythm in regard to its sounds and intervals of silence in the cardiac cycle, it is absolute proof of its perfection as a pump. The heart may be weak, irritable and irregular in its action, but if the rhythm of the sounds and intervals of silence in the cycle is correct, there is no valvular incapacity, no matter what may be the disturbed action of the heart or the number or locality of its murmurs. As soon as its rhythm is altered, its extent will measure the amount of injury the heart has received, and then the murmurs will point to the locality and nature of the disease.

Dr. Duclos, of Tours, offers a new sign of endocarditis which may possibly be of value as an aid to the early recognition of this affection. He found one day, while listening to the heart sounds of a patient, that there was a want of synchronism between the ventricular contraction and the pulse at the wrist, the latter being delayed about two-thirds of a second. The following day a systolic apex murmur was heard. This sign he has since noted in many cases, his observations having extended over several years, and in a number of cases the observations were confirmed by Professors Panot and Potain. He found that the retardation of the radial pulse was followed by a murmur in from twenty-four to thirty-six hours. The author has no conclusive theory to offer in explanation of this phenomenon, but thinks that it is

probably due to a weakening of the muscular fibres subjacent to the endocardium.

He has also noted this want of synchronism in two cases of typhoid fever, and in three of erysipelas, in which endocarditis subsequently developed, but he does not state whether any observations have been made in other diseases as well, or if the sign has ever been noted without the supervention of a cardiac murmur, both important negative points to settle before the sign can be accepted as of real value.

PROGNOSIS.—A very valuable paper on the "Prognosis in Heart Affections," was read by Dr. Leyden, at the meeting of the Verein fur innere Medicin. Dr. Leyden takes much the same view of the subject as was taken by Sir Andrew Clark, in his admirable paper of two years ago. He shows that the advance of our present knowledge is due to the emancipation of observers from purely physical methods. The clinical method now employed takes into account not only the physical conditions, but also all other and general symptoms, and has thus acquired a broader standpoint. Until recently the prognosis in heart disease was regarded by many as extremely unfavourable, but now a more hopeful view of the subject is taken. Experience shows that many who are affected with heart disease live with fair comfort, some entirely ignorant of any heart affection, for many years.

Leyden shows that sudden death from heart disease is rare except in aortic insufficiency and in true angina pectoris. In both these cases, although the patient is never safe, his life may be prolonged for years. In all other forms of valvular inadequacy, sudden death is comparatively rare. It occurred in about two hundred and ninety of the cases, that is, so seldom that the practitioner might leave this unfortunate termination out of account in prognosis. In fatty degeneration of the heart, sudden death occasionally occurs, and also in the later stages of acute diseases, or during convalescence from them. It may also occur under the influence of over-exertions or strong emotions; but, as Leyden points out, these are rather general conditions which lead to heart weakness than affections of the heart themselves. And, after all, they result in sudden death so rarely, that they need not be reckoned in prognosis.

Further observations on prognosis might be grouped under three heads: (1,) With reference to the general disposition and circumstances of life; (2,) With special groups of cardiac affections; (3,) With reference to particular physical and physiologico-pathological symptoms.

In connection with the first of these, the age must be considered.

Young children bear heart disease very badly. In adolescence and early adult life the prognosis is better. At a more advanced period of life heart diseases are for the most part associated with arteriosclerosis, a disease which has always a progressive tendency, although this progressive character may be very gradual.

In regard to *sex*, the prognosis he found much more favourable in females, as was to be expected; this was less clearly the case in hospital patients than in private practice, because women of the lower classes lead a life exposed to much the same hard work, the same mental disturbances, and partly the same excesses as men. Arteriosclerosis was, moreover, less frequent in the female sex, and even in families in which it was hereditary, it affected the female members to a less extent. Finally, experience proved that in women mitral insufficiency was more frequent than aortic insufficiency, while the latter predominated in men.

As one would naturally suppose, the patient's manner of life and his ability to take proper care of himself, are important elements in the prognosis of heart disease. Hard bodily labour is the greatest foe to the victim of cardiac disease. Mental emotions often aggravate the condition. Therefore, better results are obtained in private practice than among hospital patients. The less disturbed by worry the patient's life, and the more care he takes of himself, the better the prognosis. (If, however, as is often the case, the patient cannot free himself from care, and cannot absolutely regulate his life, the prognosis is worse than in hospital cases, for the latter, being of a lower nervous organization, are more ready to give up work and submit themselves to a regular course of treatment without great mental depression.) The readiness with which the heart responds to cardiac stimulants and tonics also affects the prognosis. If such remedies fail, the outlook is more gloomy, as a lack of recuperative power in the heart is indicated. **Digitalis** is the best drug for use in judging of the power of the heart to respond to stimulation.

TREATMENT.—**Strophanthus** continues to maintain its high reputation as a cardiac tonic, and must now take its place permanently among our most valuable aids in the treatment of heart affections.

Drs. Weidman and Rosenbusch give the following summary of the action of Strophanthus: "It increases the force of the heart and prolongs the systole; it increases the tension of the arteries, and decreases the heart's action. It strengthens the cardiac muscle and regulates the heart's work. It has some diuretic action in both heart and kidney affections. It does not disturb digestion as digitalis is apt to do. It is not cumulative in its action. There is less compensation disturbance

from its use than is found in digitalis. The best form for use is the alcoholic tincture, which contains all of the bitter glucosides of the drug. In stenosis of the aortic valve its action is negative."

Fraser's statement that strophanthus does not increase arterial tension must now be taken with some reserve, as many observers continue to report an increased tension of the arteries when it is used. It is certain, however, that it does not increase the tension as much as does digitalis. At present it would seem to be of value in much the same class of cases as digitalis, or as an alternate to the latter drug. Good results will sometimes be obtained from the one when the other fails to act satisfactorily.

Continued trial has affirmed the efficacy of **Barium Chloride** as a cardiac tonic. It has been found to slacken and regulate the heart-beat and to augment the amplitude of the pulse without producing as much increase in the arterial tension as does digitalis.

Da Costa and Hare have both added their experience of the drug to the published statements of Boehm, Kobert, Bacey, Lauder Brunton and Bartholow on this subject. Da Costa finds that it can be taken for a long time without disordering the stomach, that it has some diuretic action, and that it has the valuable property of lessening cardiac pain; a statement which Hare confirms. The latter has obtained good results from the use of barium chloride in both mitral disease, in acute dilatation of the heart, and in functional derangement of the heart. H. A. Haze ("Jour. de Médicine de Paris") has obtained good results from its use in all the above diseases, and also in aortic disease as well. The ordinary dose is gr. $\frac{1}{10}$ t.i.d., either in solution or pill form, but as much as gr. $\frac{3}{4}$ three or four times a day may be given without danger. Large doses may produce diarrhœa. The drug is cheap and almost tasteless.

A new diuretic has been introduced in the past year by Germain Sée in **Lactose,** which he considers the surest and most powerful of cardiac diuretics now known. The diuretic effect of large quantities of milk (3 or 4 quarts in twenty-four hours) has been recognized for some time, but such quantities long continued has been found to cause a certain amount of glucosuria. The amount of lactose in such a quantity of milk is from 2 to 4 ounces, and this amount of lactose alone increases the flow of urine very much without the attendant production of sugar. He therefore advises the administration of 3 ounces of lactose in 4 pints of water each day, and that all other fluids be cut off. This causes an enormous increase of the amount of urine excreted daily. The amount of urine is found to increase daily for about three days, then to remain stationary or somewhat diminished for several

days, and then to increase again without any increase of dosage. The only unpleasant effect is that it may cause diarrhœa or sweating, but these help to relieve the dropsy. It is but to administer the lactose for about ten days, and then discontinue its use for several days, when it may be resumed again if necessary. If patients object to the taste, an aromatic may be added or brandy may be given in the water. It has no effect in renal dropsy.

Lauder Brunton ("Lancet") has drawn attention to the value of **Beef Tea** as a cardiac stimulant. Xanthine, one of the constituents of beef tea, has a very powerful action on voluntary muscle fibre, but the effects on the heart muscle requires to be more carefully made out. Caffeine is really Methyl-Xanthine, and this is now recognized as an important heart tonic. In beef tea, then, we have a food which is also a stimulant to the feeble heart, and, as such, it should prove a powerful ally in the treatment of cardiac disease.

Rosenbusch recommends the hypodermic injection of a **Salt Solution** in heart failure or cardiac debility. He injects from 20 to 30 grammes (℥v. to ℥vijss) of a 6 per cent. solution, and the injection is followed in from three to five minutes by a marked slowing of the pulse and an increased tension of the blood vessels. These effects increase for thirty minutes, and then usually continue for several hours. In simple heart weakness in the course of an acute illness, the above quantity is to be administered at once and then 5 grammes daily.

The **Electrical Stimulation** of the heart has been considered in an important paper by Prof. McWilliam. He reminds us that the results obtained by Ziemssen and others in the application of the galvanic and faradic currents to the heart, while unattended by any untoward accident, were yet not conclusive since these experiments were conducted on the healthy heart. The susceptibility of the normal heart, however, is not to be taken as a test of the strength of a stimulating current which can be borne without danger by hearts that have suffered from derangement of their nutritive processes and have passed into a state of unstable equilibrium. The conditions in which the clinical use of such currents is frequently recommended may be associated with an immensely increased susceptibility to the occurence of fibrillary contraction and fatal collapse of the cardiac function. Even if galvanic and faradic currents were free from their dangers, they are of little value as direct cardiac stimulants in sudden and urgent crises. Currents too weak to excite fibrillary contraction in a heart of depressed excitability, have little influence in exciting its

beat. What is needed is an effective and speedy method of exciting rhythmic contraction, and one that will have a direct and powerful influence in calling forth a series of beats in the depressed and inhibited heart, and at the same time free from danger. He believes that a periodic series of single induction shocks sent through the heart at approximately the normal rate of cardiac action fulfil this indication; and he has never seen fibrillary contraction excited by such a mode of stimulation. Induction shocks applied to the heart exert an important influence, not only in removing the arrest of rhythmic contraction and restoring the periodic beat, but in counteracting in a marked degree the depressing effects of vagus stimulation upon the contraction force of the cardiac muscle. The application also, as a rule, leads to an increase in the force of the individual beats. It is probably best to send the stimulating shocks through the whole heart, so that the auricles may come directly under their influence as well as the ventricles. One electrode should be applied in front over the area of cardiac impulse, the other in the region of the fourth dorsal vertebra behind. The shocks should be sufficiently strong to excite powerful contractions in the voluntary muscles.

REFERENCES.—Delafield, "New York Med. Rec.," Sept. 28, 1889; Ely, "Trans. New York Path. Soc.," 1888; Fränkel, "Berl. Klin. Woch."; Duclos, "Rev. Gen. de Clin. et de Therap.," Jan. 17, 1889; Leyden, "Deut. Med. Woch.," April 11, 1889; Weidman und Rosenbusch, "Allh. Hom. Zeit."; Sée, "Bull. de l'Aced. de Med."; Rosenbusch, "Cent'rbl. für Klin. Med."; McWilliam, "Brit. Med. Jour."

Synopsis.—(Vol. 1888.) **Adonidin** (p. 8); **Caffeine** (p. 28); **Cocaine** (p. 40); **Collinsonia** (p. 43); **Convallaria** (p. 44); **Copper** (p. 45); **Naja** (p. 79); **Nitro-Glycerine** (p. 80); **Sparteine** (p. 95); **Strophanthus** (p. 101); **Veratrum Viride** (p. 106).

(Vol. 1889, p. 281.) **Sulpho-Carbolate of Soda**, grs. xxx; with **Inunction of Carbolised Olive Oil** in endocarditis; **Baily's Pill** (Digitalis, Squills, and Mercury), as diuretic. *As tonics.*—**Delphinium Staphisagria**, useful, probably, in small doses (p. 37); **Veratrum Viride**, gtt. x to xx of 1% solution in palpitation, due to gastric disorder (p. 43); **Veronin** (the glucoside of Vernonia Nigritiana), allied to **Digitalin** (p. 71). *Cardiac Stimulants.*—**Menthol**, grs. v to xx (p. 52); **Nerium Odorum**, 5 centigrammes in pill, probably of special value in neurosal cardiac affections; also as diuretic diminishing œdema (p. 56).

HECTIC FEVER.

Synopsis.—(Vol. 1889, p. 287.) **Antipyrin**, ℥j of 1% solution, about half an hour before temperature rises, then ℥ss. hourly until it falls below 38° C., continuing thus for four or five days, and increasing the strength of the solution if necessary.

HEMIPLEGIA. *Charles L. Dana, M.D., New York.*

Dr. Hughlings Jackson, says, in a recent lecture regarding the treatment of hemiplegia, that as regards treatment in all classes of hemiplegia the paralysis needs none. **Massage** and gentle **Faradization** will be of some service while we are waiting for compensation, but merely as an artificial exercise. To diminish the quantity of highly nitrogenized food, to look after digestion, to keep the patient's bowels free, is the best mode of treatment. If arterial tension be high give small doses of mercury and saline aperients. Never give strychnine in cerebral paralysis. Hemiplegia is not a nervous disease at all in the strict sense; it is in most cases an arterial affection. ("Brit. Med. Jour.")

HERNIA. *A. W. Mayo Robson, F.R.C.S.*

The treatment of hernia, both strangulated and non-strangulated, has, during the past few years, greatly improved owing to the general adoption of antiseptics.

In hernia which can be completely and efficiently retained by a truss, nothing more is required or is advisable, but where a hernia is irreducible, or if reducible, where it cannot be comfortably and efficiently retained in position by a truss, and if the patient is not too old or feeble, an operation for radical cure should be performed.

The subject of the radical cure of hernia has been very fully discussed on several occasions within the last few years.

At the Dublin meeting of the British Medical Association, no less than ten papers were presented. At the Congrès Français de Chirurgie the final results of the operation were considered, and Mons. Socin stated that he had been able to trace one hundred and thirty-nine of his patients, of whom eighty-three were completely cured, the remainder having been very much benefited by the operation.

At a recent meeting of the Harveian Society, Mr. Mitchell Banks read a paper which gave rise to an interesting discussion.

Of all the different methods of performing the radical cure, the open method is the one generally preferred; operations differing somewhat in the details. Mr. Banks removes the sac. Dr. Macewen separates it, but employs it as a pad to strengthen the weak part of the abdominal walls. Dr. Ball twists the neck of the sac. The pillars of the external ring are sutured by some; by others the ring is not interfered with. The author prefers to separate the sac, to ligature it as high as possible, and then to use part of it as a pad to strengthen the weak canal, afterwards suturing the external pillars together with silk or chromicised catgut; he has operated on sixty cases by this method, and is well satisfied with the results.

In strangulated hernia, prolonged taxis should be avoided and operation ought to be performed at as early a period as possible. If the contents of the sac are healthy, they can be reduced, but excessive omentum is best removed, the stump being ligatured and returned.

In case of the bowel being gangrenous, an artificial anus may be made, or intestinal resection and enterorrhaphy may be performed, according to the condition of the patient at the time of operation.

If an artificial anus be formed, the opening can be closed on a future occasion, either by resection and suture, or by Dupuytren's enterotome.

In operation for strangulated hernia the sac is drawn down and its neck ligatured as high as possible, so as to shut off the peritoneal cavity and make a radical cure.

Deaths after operation for strangulated hernia are, as a rule, due to the delay in operating rather than to the operation itself.

"When in doubt, operate," is a rule which should be observed in dealing with hernia producing symptoms resembling those of strangulation.

Dr. Trachtenberg has reported a case of anterior perineal hernia of traumatic origin which occupied the posterior part of the right labium majus. A brief report of the case is given in the "Annals of Surgery," p. 66, for 1889.

Mr. J. Hutchinson, Jun., in the "Brit. Med. Jour." for July 13th, 1889, has contributed an interesting article on Lumbar Hernia, and has given a table of all recorded cases, twenty-nine in number. The diagnosis rests on its reducibility and resonance with an absence of fluctuation. Cases have been mistaken for lumbar abscess, lipoma, hæmatoma, and sarcoma.

To Mr. Edmund Owen belongs the credit of having performed the first operation for a radical cure of a lumbar hernia.

Dr. Hume, of Newcastle-on-Tyne, reports in the "Brit. Med. Jour.," July 13th, 1889, a case of strangulated lumbar hernia on which he operated, resecting the gangrenous coil of intestine with a fatal result.

Dr. Dunlop, of Springfield, Ohio, and Dr. Phaenomenkoff, of Kasan, have each operated successfully on umbilical hernia in infants within an hour of birth; the cases are reported in the "Annals of Surgery," vol i., p. 226, 1889, and in the "Central. für Gyn.," No. 2, 1889.

An interesting case of operation for strangulated ovarian hernia in an infant, aged three months, in which the ovary and tube were successfully removed, was reported by Mr. Bilton Pollard in the "Lancet" for July 27th, 1889.

In the "Central. für Chir.," Nov. 4, 1887, Prof. Lucke drew atten-

tion to the frequency of so-called fatty herniæ, which consist in the protrusion of a small portion of sub-peritoneal fat through orifices in the linea alba, forming small round painful and often reducible protrusions.

Mr. Hardie, in the "Med. Chron.," p. 105, 1889, has reported several cases of a like nature, in which operation completely cured the patient of the gastralgia and other associated symptoms.

When a patient is suffering from serious chest symptoms, or when, for some other reason, an anæsthetic cannot be given, it is satisfactory to know that the injection of **Cocaine** over the tumour may sufficiently anæsthetise the region of the hernia as to render an operation painless. Three years ago the author operated for strangulated femoral hernia on an aged lady, using ½ a grain of cocaine. No pain was felt, and the patient made an excellent recovery.

Mr. Mason reports a similar case in the "Brit. Med. Jour.," vol. i., p. 834, 1889.

In the "Annals of Surgery," p. 140 and 141, vol. ii., 1889, will be found the records of several observers on the use of ether irrigation in the reduction of recently strangulated herniæ. Dr. Brustein attributes the action to a rapid contraction of the intestinal coats, as well as of the volume of the hernial gaseous contents, which is caused by the evaporation of ether, accompanied by great loss of heat. (See, also, paper by Dr. Birt, "Lancet," May 4th, 1889.)

Dr. Bauer, of New York, reports having reduced a strangulated inguinal hernia by Faradization after taxis had failed.

Mr. W. Treves has reported in the "Lancet," p. 785, vol. i., 1886, an interesting case of laparotomy for inguinal hernia reduced *en bloc* by the patient, before admission to the Margate Hospital. The procedure adopted would seem to be superior to the old operation of enlarging the canal and attempting to drag down the sac.

Mr. F. Treves reported in the "Lancet" for Oct. 13th, 1888, a case of hernia through the foramen of Winslow, for which he had performed laparotomy. At the autopsy it was found that the cæcum, the whole of the ascending colon, and a part of the transverse colon had passed through the foramen and become strangulated. Only four other cases have been reported, and these are referred to in Mr. Treves' paper.

A very valuable dissertation on the treatment of gangrenous intestine occurring in strangulated hernia appeared in the "New York Med. Jour." for March 16th, 1889, accompanied by the description of a successful case of resection of bowel.

The weight of authority at present seems to be in favour of making an artificial anus, which can be afterwards closed, unless the jejunum

be the part involved, when primary resection and enterorrhaphy must be performed.

In the "Dublin Journal of Med. Science," Jan., 1889, will be found reported, a successful case of primary resection with enterorrhaphy, by Dr. Walters; whilst, in the "Edin. Jour.," Sept., 1889, will be found the report of a case, by Dr. Cotterill, where fifteen inches of gangrenous bowel in an umbilical hernia were removed, and an artificial anus left, the case doing well.

Dr. W. Freudenthal, at a meeting of the American Medical Association at Newport, Rhode Island, last June, stated that, of five hundred subjects with abdominal hernia who had passed under his examination, one hundred and forty-three were subject to marked disease of the upper air-passages that made surgical interference absolutely necessary. Among about eighty members of a family, also examined by Dr. Freudenthal, almost all had diseases of the upper air tract, and one-third had herniæ.

Where nasal diseases are less frequent, there also, fewer herniæ are found. According to the frequency of diseases of the upper air-passages, hernia was found in 50 out of 1000 conscripts in the United States, in 22·89 in France, in 16·61 in Italy, in 14·09 in Austro-Hungary, and in less than 14 out of 1000 conscripts in the German Empire.

Hard physical work, such as lifting weights and ascending mountains, never gave a predisposition to hernia; on the other hand, sedentary occupations and certain causes which predisposed men to post-nasal catarrh and other diseases of the upper air tract, decidedly, on that account, predisposed to hernia. In women hernia was rarer than in men, on account (according to Dr. Freudenthal) of the weaker stress used in pressing down the intra-abdominal contents during the act of hawking or clearing the throat.

Dr. Morris, New York, in the "Annals of Surgery" for Nov., 1889, proposes, in cases of hernia recurring after radical cure, to suture the presenting bowel to the margin of the wound, which, he states, would probably change the direction of the line of force.

Much valuable information on the morbid anatomy, pathology, and treatment of hernia will be found in Mr. C. B. Lockwood's "Hunterian Lectures" for 1889 (H. K. Lewis, London).

REFERENCES.—Socin, "Rev. de Chir.," p. 264, 1888; Banks, "Lancet," p. 19, vol. i., 1889; Owen, "Brit. Med. Jour.," p. 55, 1888.

HERPES ZOSTER. *W. Allan Jamieson, M.D.*

Dr. Unna, of Hamburg, remarks that we must consider the treatment under two heads: firstly, when the vesicles have already formed,

and the object is to prevent them suppurating; and, secondly, when the vesicles have not actually formed, and we wish to adopt a true abortive treatment, so as altogether to prevent their formation. In the first case the remedies to use are much the same as those which are employed for the purpose of preventing the papules of acne becoming pustular—that is to say, for the abortive treatment of a boil. Here the most important remedy of all is **Sulphur**, which can be applied in the form of a gelatinous paste of sulphate of zinc; other useful substances, which can be applied in the form of lotions containing spirit, are **Corrosive Sublimate, Iodoform, Carbolic Acid,** and **Resorcin.** For the true abortive treatment there is nothing like **Ichthyol** mixed with water and painted over the part affected, or a strong paste of **Zinc** and **Resorcin.** ("Lancet," May 18th, 1889.)

In a case recorded by Dr. Byrom Bramwell ("Studies in Clin. Med.," No. 3, 1889) in which there was some congestion of the throat, 10 grains of **Salicylate of Soda** were prescribed every four hours, and the pain disappeared the day after and did not return.

Synopsis.—(Vol. 1889, p. 291.) *Locally*, a dusting powder or mild astringent lotion. In herpes zoster ½ of a grain each of **Zinc Phosphide** and **Ext. of Nux Vomica**, every three hours, eases pains and aborts the eruption; if neuralgia follows, **Arsenic, Strychnine, Quinine,** or **Ol. Menth,** are indicated.

HIP DISEASE (Splints for). *Walter Pye, F.R.C.S.*

The posterior fixation, which is the distinguishing feature of Thomas' splints, is generally considered in this country as being a sufficient explanation of the success which commonly attends its application, the practice of making direct extension, as by a stirrup and weight, being more and more confined to acute cases or to those in which painful spasm is a prominent symptom.

In America the value of direct traction as a means of fixing the hip joint while the patient is allowed to get about on crutches seems to be more generally recognized. "Taylor's" hip splint is a well-known arrangement for securing this extension without confinement to bed, but its power of fixation is small.

Dr. Lovett advises a combination of a Taylor's and Thomas' splint, so that traction may be maintained, as well as posterior fixation, without confinement to bed.

The original "Taylor's," or so-called American hip splint has two important features: (1,) A perineal strap or an ischiatic crutch head, for the purpose of keeping the weight of the body from resting on the affected limb; and (2,) The employment of adhesive plaster, for making traction on the limb by a rack and pinion. The action of this

splint is fully discussed by Dr. A. B. Judson, of New York, in the "Lancet" of Dec. 22, 1888.

On the subject of early diagnosis of hip disease, Dr. Judson has also called attention to points which are of importance, some of which, such as the difficulty of lifting up the bent limb so that the knee on the affected side can be kissed by the patient, are well enough known. He mentions as an important early sign, which is too little known, one described by Dr. A. J. Steele, of St. Louis, as a brawny thickening about the joint in front of the capsule, or behind the trochanter, when it will be found that a smaller pinch of the skin and underlying tissues can be made on the sound than on the affected side.

Local Tuberculous Deposits.—In connection with the question of the risks of general tuberculosis arising from local tubercular deposits, it is noteworthy that the practice of excision of scrofulous glands is becoming much more general, and is performed in earlier stages of the degeneration than hitherto. Instead of waiting until the caseating glands have broken down, and then enucleating them and scraping out the cavity with a scoop, the glands are removed before there is any outward sign of softening.

Mr. Frederick Treves discussed this question at a meeting of the Harveian Society. He insisted that the so-called scrofulous glands were essentially tuberculous, and that the tubercular process was to be regarded merely as an inflammatory condition of a peculiar and destructive type. If so, the argument that surgical interference was improper, because the condition was a constitutional one, fell to the ground. In the discussion which followed, Mr. Knight Treves, of Margate, speaking from his large experience, advocated operative interference even more strongly than his brother, urging more free incisions, and insisting strongly upon after treatment by pressure.

The question of *Erasion* or *Arthrectomy*, especially of the knee joint, in tubercular disease, as an alternative to excision, has not altered materially during the past year. If anything, the experience of surgeons as to the permanent advantages of arthrectomy seems to be disappointing. Although it frequently happens that union by first intention results, nevertheless there seems to be considerable risk of a useless limb, neither firmly anchylosed nor sufficiently movable to be used for ordinary progression.

Mr. A. G. Wright thus sums up the case for arthrectomy. After mentioning that the operation had been practised at Pendlebury since 1881, he states that it is chiefly applicable to the knee, the transpatella plan being the best, and that, under certain restricted conditions, the operation yields better results than excision, because no shortening,

either immediate or remote, takes place. The erasion must be most careful, thorough, and complete. Drainage should be at the back of the joint.

With the exception of the absence of shortening, the results are in all respects those of successful excision, a firm, stiff, straight limb being aimed at. Mobility, though possible, is not to be counted on; flexion will occur, unless the limb be fixed, for two or three years at least.

A considerable number of cases are not suitable for erasion, but erasion may be practised at an earlier stage in the disease than excision. Both require long after watching to prevent distortion, and there will always be a considerable number of cases in which either operation will fail.

REFERENCES.—Barker, "Brit. Med. Jour.," Jan. 19, 1889; Lovett, "New York Med. Jour.," Feb. 9, 1889; Treves, "Lancet," May 25, 1889; Wright, "Lancet," Dec. 1, 1888.

HYDATIDS.

Dr. Juan Mercaut ("Revis. Balear. de las Ciencias Méd."; "Lyon Méd."; "Med. Chron.,") following the example of Dolbeau and Luton, has treated a case of hydatids of the thigh, from which acephalocysts were being discharged, by irrigation with a 6 per cent. solution of **Boric Acid** and injections of **Ox-gall** mixed with an equal quantity of lukewarm water. Three injections are said to have sufficed to expel all the hydatids with their membranous envelopes. ("New York Med. Jour.," Dec. 8, 1888.)

HYDROA, DERMATITIS HERPETIFORMIS.

Synopsis.—(Vol. 1889, p. 292.) Change of air, nutritious diet, avoidance of Alcohol, tonics, Ol. Morrh; Quinine, grs. ij to x; Liq. Arsenicalis up to ♏viij or x; Tinct. Belladonna, ♏xv to xxx, with Sulphide of Potassium Baths, ℥ij to 4 or 30 gallons, or use Antipruritic lotions, *e.g.* Liq. Carbonis Detergens. If nervous depression be present give Nux Vomica and Phosphoric Acid.

HYDROCELE. (See also "Varicocele.") *E. Hurry Fenwick, F.R.C.S.*

Mr. McArdle quoted by Mr. Sibthorpe gives the following statistics of hydrocele operations: Of three hundred and fifteen cases treated by injection, 13 per cent. recurred; of two hundred and forty-five cases treated by incision, 2·4 per cent. recurred; of fifty-three cases treated by partial resection of the tunica vaginalis, 1·9 per cent. recurred; of twenty-two cases of complete resection 0·0 per cent. recurred.

Compare Mr. Morris with two cases of recurrence of the hydrocele after resection of the tunica vaginalis. ("Med. Annual," 1889.)

Hydrocele Neonatorum.—Wechselmann states that the frequency of

hydrocele observed in the Maternity Hospital at Dresden was thirty-seven boys affected out of two hundred and seventy (13·7 per cent.). He found that the hydrocele is most often found on the right side (only 5 per cent. were on the left), and communicated comparatively often with the peritoneal cavity (37 per cent.); he thinks it is probably of intra-uterine origin.

Mr. Hind has used **Liq. Hydrarg. Perchlor.** three times the strength of the B. P. solution as an injection for radical cure. The hydrocele fluid was first drawn off. The sac was then washed out with the mercury solution, and finally all remaining fluid was drawn off. There was no pain and no inflammation.

Mr. Jacobson believes that failure with the iodine solution is often courted by want of the following precautions: (1,) The use of a too dilute solution; (2,) Not bringing the solution in contact with the whole of the sac; (3,) Not withdrawing all the hydrocele fluid; (4,) Injecting large hydroceles immediately after they are emptied; (5,) Making use of iodine in hydroceles with thick walls. By an injection of cocaine previous to the iodine the sickening pain is avoided.

REFERENCES. — Sibthorpe, "Brit. Med. Jour.," Feb. 20, 1889; Hind, "Lancet," July 9, 1889, p. 14, part ii.; Wechselmann, "Arch. f. Chir.," bd. 36, heft. 3; Jacobson, "Operation of Surg.," 1889, p. 911; Barnard, "Lancet," July 20, 1889, p. 147, part ii.

HYDRO-NEPHROSIS. (See "Kidney Diseases.")

HYDROPHOBIA.

Synopsis.—(Vol. 1888.) Cantharides (p. 30); Guachamaca (p. 55); Speræa Filipendula (p. 98.)

HYDROPS.

Synopsis.—(Vol. 1889, p. 50.) Kava Kava. ℞ Ext., Kav. depur., grs. xlv; Sacch. Alb., 5v., M. Ft. Pulv., Divid. in part, x. Sig. Pulv. j 3tis. hor. as diuretic.

HYDRO-SALPINX. (See "Uterine Appendages.")

HYPERÆSTHESIA.

Synopsis.—(Vol. 1888.) Acetanilide (p. 2); Aconite (p. 7).

HYPERHIDROSIS. *W. Allan Jamieson, M.D.*

Unna recommends for this affection, when the parts are cold, that before the patient goes to bed he should bathe the affected parts with hot water to which has been added some irritating substance, such as camphor, mustard, or vinegar. Then, after drying, the part should be enveloped in an ointment which will cause hyperæmia, such as:—

℞ Turpentine	5 parts	Oxide of Zinc	10 grammes
Ichthyol	5 parts		

In the morning the ointment is to be washed off and the parts are to be rubbed with ice-cold water, the friction being continued till hyperæmia and warmness of the skin are induced; then the skin is to be powdered with a powder containing mustard flour. If the feet are affected, the stockings should be powdered before they are put on. Where the parts are warm, the hot and cold baths are to be omitted and **Ichthyol** is to be used; lukewarm baths in the evening, followed by a two and a half per cent. ichthyol ointment, washing off with lukewarm water and ichthyol soap in the morning and leaving on some of the dry soap-suds, is the method of treatment. ("Monat. für Pract. Derm.," 1889.)

HYPERTRICHOSIS HIRSUTUS.

Synopsis.—(Vol. 1889, p. 293.) **Electrolysis**; Introduction of a straight needle dipped in **Carbolic Acid**.

HYPNOTICS.

Synopsis.—(Vol. 1888, p. 324.) **Amylene Hydrate**, ℥j, with **Syr. Zingib.** or Tinct. **Vanillæ**, in sleeplessness with delirium; **Hypnone**, gr. v to x, to allay nervous irritability; **Methylal**, ♏ x to xxv; **Hydrobromate of Hyoscyamine**, gr. $\frac{1}{120}$, better to procure sleep than to subdue excitement.

(Vol. 1889.) **Caffeine**, small doses when insomnia is caused by thoughts and ideas crowding the mind. **Strychnine** in small doses when insomnia is due to over work, mental or physical. **Sulphonal** grs. xv to xxx.

HYPNOTISM.

C. Lloyd Tuckey, M.D.

Hypnotism as a therapeutic agent is not a new thing. Forty years ago James Braid, surgeon, of Manchester, invented the name and applied the method in practice. He built up his system on the ruins of mesmerism and animal magnetism, and, extracting from a mass of chaff a good deal of grain, he explained rationally and scientifically many of the phenomena observed by Elliotson and others. His method seems, however, at least in England, to have died with him, and, were it not for the labours of Dr. Liébeault, of Nancy, his work might have remained forgotten.

Following up Braid's discoveries, Liébeault began, about thirty years ago, to practise hypnotism in a public dispensary at Nancy, and in 1866 published the results of his experience. He soon hit upon the point which Braid had missed, viz., the value of suggestion in the hypnotic state. He explained that, though hypnotism is itself useful in certain cases, suggestion is really the curative agent, and that the main characteristic of the hypnotic state is increased susceptibility to suggestion. Liébeault worked on comparatively unknown until, in 1882, Bernheim, professor in the Faculty of Medicine at Nancy, investigated the treatment and became convinced of its value. He

shortly afterwards published his book—"De la Suggestion de se set Applications a la Therapeutique." The second edition, issued in 1888, may be considered the text book of the subject.

The system has made great progress on the continent. Charcot practises it at the Salpêtrière, and about two hundred medical men from all parts of the world attended the first international congress of hypnotists in Paris, in August, 1889.

Public performances in which hypnotism figures are forbidden in most countries, and its practice is confined strictly to medical men. Its employment by masseurs, nurses, and unqualified persons should be prevented, as likely to produce social dangers, and to bring the thing into disrepute.

The student of hypnotism should, if possible, see the system practised on a large scale in the wards of the Hôpital Central, at Nancy, and at Liébeault's dispensary, or at the Salpêtrière and other Paris hospitals. Ocular demonstration and observation of the necessary minutiæ is, of course, to be recommended, but any practitioner will probably find himself able to hypnotise a susceptible subject by observing the following hints, and greater success will come by practice and with increased confidence. I have found intelligent artisans are the best subjects, especially when they are fatigued by the day's work. Anæmic and phthisical persons, and adolescents of both sexes, are also easily hypnotised.

Even if the patient has been frequently hypnotised, mental emotion, such as fear, will prevent the operation succeeding, and so it is necessary in all cases to acquire his confidence and co-operation before commencing. This may be done by a few minutes' preliminary conversation, and by showing him another patient in the hypnotic state. He is then told to rest comfortably on a couch or in an arm chair, and directed to look steadily at an object—either one's finger or a bright dazzling surface, held about twelve inches above the eyes, and in a position to somewhat strain them. At the same time the operator lightly presses his hand on the temples and tells the patient to rest comfortably and without anxiety, and that he will soon feel drowsy. In a short time—from a few seconds to three or four minutes—the pupils will be seen to slightly contract or dilate, and the eyelids to twitch or partially close; and these signs of ocular fatigue justify one in asserting in a confident tone that the sight is becoming indistinct and the eyes heavy. These suggestions increase the effect, and may, if necessary, be followed by others referring to fatigue and sleep until the eyelids drop spontaneously, or are gently closed. It will generally be found that the patient is in the hypnotic state, but the degree

depends upon individual susceptibility. Only a slight languor may be felt, or a profound trance may be induced.

The majority of persons are influenced by hypnotism, but only in a minor degree, and it is important to remember that the amount of benefit is by no means always in proportion to the degree of somnolence, and that some most satisfactory cures are recorded where the subject was hardly aware of any influence.

For practical purposes the stages of hypnotism are arbitrarily divided into six or eight degrees, but one passes insensibly into another, and it is only necessary to classify them under: (1,) Lethargy, (2,) Catalepsy, (3,) Somnambulism. In the first two stages the patient is perfectly conscious, but there is a greater or less disinclination for exertion, and a loss of control over the voluntary muscles. He answers questions addressed to him not only by the operator, but by bystanders. He experiences a sensation of warmth in any external part to which his attention is directed by touch and suggestion. His mind is more or less a blank, except in the direction given it by suggestion. He may be unable to open the eyes or to move a limb, but he is sensible to pain, can mentally resist suggestions opposed to his volition, and his hearing and other senses are often abnormally acute. He either awakes spontaneously in a few minutes or longer time, or is aroused by the operator telling him to open his eyes.

Somnambulism "Le Grand Hypnotime" of Charcot is a different thing altogether. The subject is unconscious, and seems deeply asleep; he answers only the operator, and is deaf to any sound but his voice. There is more or less complete anæsthesia, so that painful and even capital operations may be performed without his knowledge. This is the condition to which the unfortunate victims of professional magnetisers are reduced, and it renders the subject powerless in the hands of the operator, and obedient in carrying out his suggestions not only at the moment, but in many cases after the lapse of long periods of time. Any delusion may be foisted upon him, and he will act upon it; and if he is told not to see a certain person who is in the room, when he wakes up he will apparently be unconscious of his presence—negative hallucination. Frequently, however, gleams of consciousness reveal what has passed, and, like a half forgotten dream, the subject recalls this or that suggestion made during his state of trance; and, when again hypnotised, he may be made to recall any incident.

This condition is of great interest from a psychical standpoint, and were anæsthetics less easily used, it might play an important part in surgery and dentistry, as, in fact, mesmerism did in the hands of Esdaile.

Liébeault finds in one hundred subjects about the following results :— Uninfluenced, five ; slightly influenced, fifteen ; sleepers, sixty-five ; somnambulists, fifteen.

Van Eeden and Van Renterghem, at Amsterdam, and De Jong, at the Hague, obtain somewhat similar results among the phlegmatic Dutch, and Prof. Forel, of Zurich, finds a large proportion of somnambulists in his Swiss "Clinique." My own experience with about two hundred English patients of all ages, and in different social positions, shows a larger proportion of persons uninfluenced, about 20 per cent., and fewer somnambulists, about 8 per cent. But this may depend upon coincidence, and not on national insusceptibility.

Probably any medical man will be able to hypnotise ordinary subjects after a little practice, as his mental training has taught him to rely on himself, and to exercise influence over others.

Theory of Hypnotism.—It is supposed that prolonged staring at a fixed object, with the desire and expectation of sleep, causes fatigue of the retina and muscles of the eye, which is promulgated from the visual centres to other sensory and motor tracts, inducing molecular changes in the brain cells, and initiating a peculiar psychical condition analogous to, but differing from, natural sleep. The functions are inhibited, as seen in hypnotic paralysis, deafness, and anæsthesia ; or exaggerated, as seen in increased muscular power, acuteness of hearing, and hyperæsthesia, and the agent which produces these effects is *suggestion*. The hypnotic state differs from ordinary sleep, because in it the mind is abnormally open to suggestions, and intent on acting upon them. In sleep imagination has free play, and runs riot in dreams, whereas in hypnotism it can be controlled and directed into a given channel, so as to influence functions and organs which lie normally beyond its scope, *e.g.*, the heart and circulation, the vaso-motor centres, intestinal and uterine secretions.

Medical Uses of Hypnotism.—The experience of many years has proved the value of hypnotic suggestion, but enthusiasm and self-deception are especially to be guarded against, and it should be looked upon as an auxiliary only in treatment.

The idea that hysterical subjects are the best patients is erroneous, though some of the most brilliant cures have been of hysterical paralysis, aphonia and amaurosis, and pilgrimages to Lourdes in such cases may be rendered unnecessary by the use of hypnotism.

Besides purely hysterical troubles, hypnotism is efficacious in neurasthenia, spinal irritation, railway spine, brain fag, sleeplessness, functional derangements of the genito-urinary organs, such as ovarian irritation, vaginismus, impotence, nocturnal enuresis, headaches of

nearly all kinds, even *migraine*, neuralgias, wherever situated. I have seen it helpful even in the gouty sciatica of an aged man.

In menstrual difficulties, whether dysmenorrhœa, amenorrhœa, or menorrhagia, not only when dependent on functional causes, but even sometimes when there is structural change, *e.g.*, subinvolution. In occupation neuroses, such as writer's cramp—often combined with massage—in painful local affections, as cramp, torticollis, and lumbago, in some cases of epilepsy, and especially hystero-epilepsy, I have seen it modify the attacks, even in the traumatic form. In nervous dyspepsia, colic, some forms of constipation, and diarrhœa: in many of these conditions relief is most rapid and marked, and often a permanent cure follows.

In organic disease, as Bernheim points out, there are generally sympathetic and functional troubles, and these can be relieved and controlled by suggestion, *e.g.*, palpitation and sleeplessness in cardiac disease, constipation and lightning pains in locomotor ataxy.

In midwifery hypnotism may be used to relieve after pains, and sometimes even as an anæsthetic during labour. In hypochondriasis and melancholia good results are sometimes seen, but, unfortunately, it is difficult to influence patients suffering from mental disease. It is employed in several continental asylums, and especially by Voisin, at the Salpêtrière. He sometimes succeeds in hypnotising and curing patients in acute mania, but he is gifted with more patience and determination than most of us.

In moral diseases there is a great future for hypnotic suggestion, for it effects wonders in dipsomania, the morphia habit, masturbation, and other vices. It restores in these cases the power of self-control, and resistance which has become a negative quantity, and produces a healthy moral tone. The victims of drink and onanism are almost invariably good subjects for the treatment. I believe it affords almost the only hope of cure—short of castration—in a confirmed masturbator, and, were this its only use, it would be well worth studying and applying. In moral cases the patient should be kept under observation for twelve months, to prevent relapse.

This short sketch will perhaps induce some medical men to inquire into and use the system. They will find it simple and interesting, and will, by adopting it, prevent it falling into the hands of charlatans. The golden rules laid down by Beaunis must be observed: (1,) Never to hypnotise except with the patient's free consent, and, if necessary, that of the friends; (2,) Never to make any experiment without the knowledge and consent of the patient; (3,) Never to operate except in the presence of a third person.

NOTE.—The following imaginary case will elucidate some practical points :—A. B. suffers from functional dyspepsia, constipation, sleeplessness, and depression of spirits, and as he has had a good deal of ordinary treatment, it is decided to try hypnotic suggestion. He is hypnotised, and suggestions bearing on his symptoms are made. For instance, he is told he will enjoy his food, and it will cause no pain ; that he will feel a desire for stool, followed by a natural motion the following day ; that he will fall asleep on lying down, and will sleep until such and such an hour ; that his spirits will improve, and that he will awake refreshed and comfortable. After a few minutes he will awake spontaneously, or on being told once or twice to open his eyes. It assists verbal suggestion to quietly rub the abdomen or seat of pain, and to suggest local warmth. On being questioned, the patient will generally be found to express a feeling of comfort and warmth after treatment, and the operation should be repeated daily for as long as it is necessary. In dipsomania disinclination for alcohol is suggested, and absence of craving. Each case requires somewhat different treatment, and the physician's knowledge and tact are freely called into play.

HYPNOTISM (Psycho-Therapeutics, Suggestive Psycho-Therapy).

Charles L. Dana,. MD., New York.

There has been a flood of articles during the past year upon the above subject, principally by French and German writers. The translation of Bernheim's work upon "Suggestion" in therapeutics, by Dr. Chs. Herter, of New York, and the work on "Psycho-therapeutics," by Dr. C. Lloyd Tuckey, of London, besides some minor articles, have called the attention of the English readers to the subject. Prof. Forel has written a monograph and several short articles upon hypnotism, and has established the practice in Zurich. Dr. Moll, of Berlin, has written quite a large volume, and has excited the interest, as well as antagonism, of many members of the medical profession of that city. A "clinique de psycho-therapie suggestive" has been established at Amsterdam by Drs. A. W. Van Reuterghem and F. Van Eeden, and these latter gentlemen have recently published the results of two years' work. Prof. Krafft-Ebing has also written an interesting monograph on the subject. A congress of hypnotism was held in Paris last summer, at which several articles were read and discussed. Prominent physicians at Berlin, Vienna, and Paris still contend that hypnotism is a morbid mental state, and that its practice has serious attendant evils due to its enfeebling the volition of patients.

One of the most practical and careful articles which has come to our attention is that by Van Reuterghem and Van Eeden, of Amster-

dam. (Bruxelles: A. Mauceaux. Edition 1889). These authors analyze the results of their work in four hundred and fourteen cases of all kinds of nervous diseases and allied ailments. The figures given show very clearly that the chief utility of hypnotism lies in cases of rheumatic pains, neuralgias, headaches, menstrual troubles, and some forms of hysteria. The severer constitutional neuroses, organic diseases, and insanities are but little helped.

Their results summarised are: Effect nil, 19·83 per cent.; slight improvement, 26·11 per cent.; notable, 27·37 per cent.; cure, 27·65 per cent. Of the four hundred and fourteen patients, only fifteen were refractory to the hypnotic influence, two hundred and seventeen went into light sleep, one hundred and thirty-five into deep sleep, and forty-seven into somnambulic sleep. (See also preceding article.)

HYPOPION ULCER. *W. Lang, F.R.C.S.*

Despagnet has had great success in treating these cases with 2·5 per cent. solution of **Nitrate of Silver,** which is brushed over the conjunctiva after the ulcer has been cauterized with the galvano-cautery. At the same time he uses atropine.

Abadie employs **Eserine** in those cases where a prolapse has or is about to take place. The writer agrees with both these plans, and has also had great success in saving apparently hopeless cases. He cannot, however, impress too strongly the advice, that an iridectomy should be performed, at the earliest possible moment after the discharge has ceased, in every case where a prolapse has taken place and consequent adherent leucoma exists. If this is delayed the inevitable glaucoma sets in, and leads to the destruction of the eye, in spite of iridectomy, sclerotomy, etc.

Verdese has continued his study of these cases, and has experimentally proved that the pus is permitted to enter the anterior chamber through a rupture of Descemet's membrane, although some layers of corneal tissue are still intact.

Ozæna and Recurrent Hypopion Ulcer—Trousseau draws attention to these cases, remarking that, in spite of the lachrymal passages being normal, these patients have many relapses until the ozæna is cured. The cases he has observed have usually been those where the mucous membrane only has been affected, and which have promptly improved under irrigations of **Perchloride of Mercury** solutions, 1 in 2000, twice a day.

HYSTERIA. *Charles L. Dana, M.D., New York.*

From a study of seventy-nine cases Dr. Paul Penguiez draws the following conclusions which are certainly sound, except that

hysteria *is* rare among children. He says: (1,) Hysteria is not rare among children; (2,) The chief predisposing cause of infantile hysteria is heredity; (3,) The disorders of the perceptive faculties are among the first symptoms of the disease; (4,) The symptomatology of hysteria, in either sex, is almost exactly the same with the child as with the adult; (5,) Treatment is more likely to succeed in the case of a child than in that of an adult; (6,) The earlier the diagnosis is made, and the treatment begun, the better the prognosis; (7,) The most efficient treatment is by isolation; (8,) Infantile hysteria sometimes prevails as a kind of epidemic.

M. Empereur has made studies of the urinary excretion in ten cases of mild chronic hysteria. The results showed a slight degree of diminution in the excretion of urea and phosphoric acid.

The Treatment of Hysteria and Neurasthenia.—No book knowledge and no drugs will ever enable the physician to treat hysterical and neurasthenic patients well. Still, practical discussions of the subject are not without value; and there is a very sound article upon it in the "Cent. für Nerven.," No. 13, 1889. Here are some of the concluding hints: (1,) A neurasthenic patient ought not to be allowed to starve, for his gastric catarrh is not a genuine one; nor should he be kept on an exclusively animal diet, nor should strict temperance principles be carried out. Many such patients instinctively crave wine, beer, brandy, coffee or tea. Anæmic or illy-nourished patients can bear stimulants better than can fat and plethoric people; (2,) Systematic exercise, walking, riding, travelling, gymnastics, and mental exercise, strengthen the organism, and discipline mental activity. Exercise awakens self-confidence, and leads the patient's attention away from his continual ailing. Still nothing must be overdone; here again, the physician must rule; (3,) Climatology. Here, again, strict individualization is necessary; (4,) Isolation. The family generally submits to every whim of the patient. Cases may happen, in which the mere threat of isolation, may arouse the patient's will-power from its lethargy; (5,) Rest, which often means change, is necessary when brain fag is the consequence of an overworked brain; there is rarely a necessity for confinement in bed; (6,) Weir Mitchell's treatment has been overdone, and can only be recommended in certain cases; (7,) Time and patience are necessary. It is well that the patient should understand the importance of these two factors.

In this connection we may quote the remarks of Dr. J. Matthews Duncan on this subject. He says, after strongly advising against the use of pessaries, electricity, or any new fad employed to affect the imagination, that the difficulties in the treatment of hysterical women

have apparently been solved by the Weir Mitchell system. Certainly it relieves the physician of danger and provides the most effectual method of subduing the morbid impulses which lead to hysterical manifestations. Deprived of unhealthy surroundings and in the power of the master, beyond the reach of friends' interference, the problem is shorn of its greatest difficulties.

Dr. Samuel B. Lyon, of New York, reports a case of hystero-epilepsy in which the attacks were stopped by an injection of pilocarpine (grain ⅛).

REFERENCES.—"L'Hysteria Chez. des Enfants"; "Jour. of Nerv. and Ment. Dis., April 1889; "Cent. für Nerven., 13, 1889; "Med. Times and Register."

Synopsis.—(Vol. 1888.) **Allyl** (p. 11).
(Vol. 1889.) **Paraldehyde** ℥j to ij, as hypnotic (p. 58).

ICHTHYOSIS.

Synopsis.—(Vol. 1889, p. 295.) Alkaline baths with friction followed by inunction of **Lanolin, Glycerine,** or **Olive Oil,** or **Ung. Sulphuris,** 5%, **Ung. Resorcin,** 3 to 20%; **Naphthol Ointment,** 5% These must be rubbed in night and morning at first, and afterwards twice a week.

IMPETIGO.

Synopsis.—(Vol 1889, p. 295.) Removal of crusts by oil packing or poulticing, followed by mild **Ammoniated Mercury Ointment,** v or x grs. to ℥j; **Calomel** or **White Precipitate,** v or x grs. to Lard ℥j.

INCONTINENCE OF FÆCES. *Herbert W. Allingham, F.R.C.S.*

Incontinence of fæces or flatus may result from operating injudiciously upon cases of fistula: (1,) When too deep a cut has been made through both sphincters, the wound may heal in such a way as to cause a deep sulcus. Hence the continuity of the sphincters is interrupted at one point, and the contraction of the scar causes their edges to curl outwards. While the muscles are still strong, and the cicatrix soft and pliable fæces may be retained, but subsequently the scar contracting and the continuity of the sphincters being broken, join in producing a loss of muscular power; (2,) No deep sulcus may have been formed, but the sphincter may have been divided in two places and a weak splicing have ensued; this generally occurs when the muscles have been divided obliquely, not at right angles to their fibres; (3,) In women from the decussation of the sphincter vaginæ and the rectal sphincters, a simple operation on a fistula in the perineal region may cause incontinence of fæces. There are many plastic operations that have been tried in these cases, but the application of the actual cautery is the most successful.

The cautery should be used in the following manner: Burn deeply with the Paquelin cautery into the external and internal sphincters

in several places ; at the same time cauterizing the old scar or scars, and burning deeply into the tissue just around the anus. The cicatrix resulting from the burning is followed by great contraction and consequent drawing in of all the surrounding tissues. Thus the anal orifice is narrowed and power obtained to retain fæces.

REFERENCE.—"Med. Press," etc., 1888.

INCONTINENCE OF URINE. *E. Hurry Fenwick, F.R.C.S.*

Baruch finds in the New York Juvenile Asylum nocturnal incontinence in 10 per cent. of the children, girls being equally affected as boys. He finds the best remedy to be **Atropine.** Sufficient is administered at four o'clock in the afternoon to ensure dilatation of the pupil, and the dose is repeated at seven o'clock in the evening if the pupils have not been affected ; $\frac{1}{60}$ grain is given to children from six to ten years old, and double that quantity up to the age of fourteen. If the afternoon dose has widely dilated the pupil, the evening dose can be omitted. Several writers reiterate this year the value of the old-fashioned and successful method of treating incontinence in boys by circumcision. (*Vide*, "Circumcision.")

Dr. Gersuny describes a new operation for curing complete incontinence in a girl aged fourteen years. The urethra was laid freely bare up to the pubic arch, the external orifice was then twisted in its long axis through 180°, and fixed in that position by a suture. The success was incomplete. Three weeks later the orifice was twisted 90° more. A third operation, in which a further torsion through 180° was performed. After this retention ensued, and the patient was catheterised for three days. She then passed water voluntarily and was free from incontinence. Five months later the patient was much in the same condition as other people.

Mr. Jacobson treated a case of diurnal incontinence by Sir D. Corrigan's method of painting the meatus with **Collodion,** at first at intervals of every half hour, and then every two hours. The result was successful.

REFERENCES.—Baruch, "Arch. of Pediatrics," April, 1889 ; Gersuny, "Lancet," p. 1317, Pt. i. ; Jacobson, "Lancet," June 8, 1889, p. 1138.

Henry Dwight Chapin, M.D., New York.

Dr. Eloy ("Gaz. Hebdom. de Méd. et de Chir.," May 17, 1889,) recommends the use of **Rhus Aromaticus** in the nocturnal incontinence of urine in children, employing either the tincture of the bark or the tincture of the leaves. The former preparation is obtained by macerating 200 parts of the bark in 800 parts of alcohol, the dose being 20 to 50 drops daily, diluted with water. The second preparation is

made by the extraction of 200 parts of the leaves with 800 parts of 80 per cent. alcohol, the dose being 15 to 60 drops daily, either taken at one time or at intervals, diluted with water.

Descroizilles ("La Bull. Méd."), advises the use of **Strychnine, Ergot** and **Rhus Tox.** as internal remedies.

Dr. J. E. Clark ("Arch. Ped.," March, 1889), treats incontinence by passing the **Sound.** In a practice of nearly forty years, the author has had a large number of cases of incontinence of urine in children, and he has used nearly all the drugs that have ever been suggested for this condition. It finally occurred to him that in many cases perhaps the trouble was due to a condition of irritable urethra, such as is present in the adult in cases of spermatorrhœa; and if so, that it could be cured in the same way, by the passage of the sound. Repeated examinations have proved the correctness of this view, and the author recommends the sound as the proper measure in all uncomplicated cases of incontinence of urine in children. He adds that he has never found any stricture, only a spasmodic resistance to the passage of the sound, sometimes called spasmodic stricture. The writer warns against dilating the urethra. He believes No. 9 English is as large as most children under twelve years of age can bear.

Synopsis.— (Vol. 1888, p. 477.) **Belladonna,** Tinct. ♏v to xx; **Creasote,** ♏j; local applications of **Nitrate of Silver,** in strong solution or solid form, to urethra in neurotic cases; if due to worms, small doses of **Scammony** and **Calomel; Tincture of White Lycopodium; Rhus,** Fl. Ext. x to xv drops.

(Vol. 1889, p. 296.) **Electricity** by Guyon's method. **Rhus Aromaticus Tincture,** gtt. xx to 1 daily. Ext. **Ergot Fluid,** gtt. v to x continued for two or three weeks for child from 1 to 3 years old; gtt. x to xx 3tis hor. for child from 3 to 10 years.

INGROWING TOE NAIL. *Walter Pye, F.R.C.S.*

This condition is advised by Hofman, of Munich, to be treated by washing with **Perchloride of Mercury** solution, and then to apply several drops of strong **Perchloride of Iron** solution. The resulting crust is removed in a few days with the softened and friable nail, and the application is repeated until the surface of the skin and nail is smooth.

Dr. Clemons again, strongly recommends the employment of **Tinfoil** for this condition. He washes and dries the toe and envelops it in tinfoil, which he also packs in between the edge of the nail and the raw edge caused by it. A light layer of wax is applied over all. The foil, etc., is renewed at necessary intervals, but is stated to last some time. The results of the application of tinfoil are said to be most satisfactory, and its curative action is attributed by Dr. Clemons to the effect

of the permanent contact of a combination of metals, *i.e.* iron, copper, arsenic, molybdenum, wolfram, and bismuth, with a moist and growing portion of flesh. We were not previously aware of the composition of tinfoil.

INGUINAL COLOTOMY. (See "Colotomy.")

INJURIES, ABDOMINAL. (See "Abdominal Injuries.")

INJURIES, GENERAL. *Walter Pye, F.R.C.S.*

The question of the bearing of modern surgical practice upon the causation, aggravation, or mitigation of shock has been recently considered by Dr. Cheever, of Boston, who, prefacing that, though surgery has annulled pain, arrested hæmorrhage, and averted septicæmia, it has as yet, done little to lessen the fatality of shock, states the influence of modern operative surgery upon the effects of shock may be summed up under the heads of:—

(1,) *The effects of Anæsthetics.*
(2,) *The effects of the Operation.*
(3,) *The effects of the Dressings.*

He considers that the whole result is, that with regard to the production of shock, modern methods have reduced pain and hæmorrhage, but have increased the tediousness of operations, the nausea, the exposure at the time of operating, and the consequent low temperature. Primary shock is diminished, secondary shock is increased. Nausea is one of the symptoms of shock, and is the most dangerous factor in producing anæsthesia. With regard to anæsthetics, he states that they all annul pain at the expense of nausea. He considers it an axiom that anæsthesia does not diminish existing shock, but only annuls the additional shock which the pain of cutting produces. Further, in feeble subjects, the lack of nourishment which precedes an operation, and which is desirable on account of safe anæsthesia is much aggravated by the inability to retain food after the operation, and this has an important influence in bringing about collapse. Lowering of the bodily temperature is constant after an operation under anæsthesia, and is primarily caused by the anæsthetic ; but this is aggravated by careless exposure, and the application of sprays, douches, and wet cloths to the body. Evaporation also goes on very rapidly from the exposed body surfaces, and especially from exposed peritoneum, in a warm atmosphere. Dr. Cheever also insists that the tendency of modern surgery is to unduly prolong operations, so that patients are frequently one and a half to two hours on the table, the older methods of quick surgery having been abandoned.

In cases of primary shock, operation should be delayed until re-

action has come on, at some time between six and eighteen hours after the injury.

The following are the chief rules of treatment for the prevention or alleviation of shock.

Before operation :—

(1,) Wait for reaction.

(2,) Give alcohol in some form, a quarter of an hour before anæsthesia.

(3,) Anæsthesia to be as short as possible.

(4,) Operation to be as rapid as is prudent.

(5,) Dressing to be as short as possible.

(6,) The patient never to be chilled.

After operation :—

(1,) Persistent and carefully applied dry heat.

(2,) Nutrient enemata.

(3,) Hypodermic injection of **Brandy**, (ether is not mentioned), **Sal Volatile,** or other stimulant.

(4,) Quiet and rest, with the head low.

In an editorial article from the "Therap. Gaz.,' upon Dr. Cheever's paper, the use of the hot water bath, and especially of the hot water *bed* is strongly advocated in the treatment of shock. Ether is preferred to alcohol as a stimulant.

As a stimulant also, true **Beef Essence** may be useful, but no ordinary food should be tried to be administered during shock.

Among the drugs which may be useful in shock as stimulants of the vaso-motor system, **Atropine, Ergot, Digitalis,** and **Ammonia**, are mentioned.

Professor Ogston points out that the especial features of compound fractures and other injuries which occur in factory accidents, railway accidents, and the like, are due to the enormous force applied, so that the local disintegration is vast, and the alterations in the neighbouring parts are correspondingly important. These latter are as follows :—

The effects of the passage of a great weight, as a railway train across a limb, is that all the liquids are squeezed out of the part compressed. The quantity of fluid thus forced into uninjured tissues is often very considerable. Large and small cavities are established, filled with blood and serum, and the fascial connections between the muscles are broken down. This centrifugal pressure, as Prof. Ogston terms it, is not the only cause of this disorder of parts not directly injured themselves, but which are in the neighbourhood of the injury, for it is seen in accidents which are more slowly produced, as in the leisurely avulsion of a limb by machinery. In these cases the spaces are formed by the stretch-

ing. In either case the vitality of the walls of the cavity is very low and the fluids are prone to decompose. It follows, then, that it is very necessary in the treatment of these severe injuries that the surgeon should be well aware of the existence of these spaces and denudations, and be prepared to explore them thoroughly, to render them aseptic, and to drain them completely. A short beaked steel bladder calculus sound is recommended to be used as an exploring instrument, its beak turned up against the skin serving as a guide for counter incisions for drainage. The tubes must be large and are most easily introduced by a common lithotrite, inserted as the exploring sound is withdrawn. When the ends of the bones are soiled, or contused, or fissured, in a compound fracture or dislocation, it is a mistake to leave them; they should be freely removed, and for this purpose the mallet and chisel is generally more suitable than the saw. The injured ends of the bones should be removed, even if the articulation is involved. Surgeons err, rather, in not removing enough bone than in taking too much. By free removal, the necessity of wiring the ends together to secure apposition, and other complications are avoided, while the pain suffered by the patient, and the time of his confinement to bed are much lessened. The principles of treatment which govern severe compound fractures and dislocations in civil life apply equally well and importantly to severe gunshot injuries of the limbs.

Dr. Brown, of New York, also describes the effects of severe railway and tramway accidents as they have been observed by him. His observations agree somewhat closely with those of Prof. Ogston. He states that when a hand or fingers have been caught between "draw-heads," the parts are practically amputated, but that in "jumper accidents" (*Anglice*, buffer accidents?) the parts are crushed to a pulp, and the skin burst open, and the soft parts pressed in through the opening. In the forearm the bones may be squeezed out from between the bumpers like a cherry stone between the fingers and thumb. When the injury is due to the passage of wheels over a limb, the skin may be unbroken, and, to a casual observer, may not show even a mark, but when the knife is thrust in, the limb will collapse like a broken bubble, and all the soft parts, and even the bone, will be found to be reduced to a fluid pulp.

Dr. Brown considers that injuries caused by bumpers and car-wheels are the most serious which are met with in railway surgery, and the statistics he appends bear out the conclusion.

With regard to the question of amputation for railway injury, Dr. Brown advocates *immediate* operation, *i.e.*, while the patient is in a condition of shock, without waiting for reaction, believing that, from

the nature of the injury, every hour that passes after the disintegration which he describes, adds to the risk of septic poisoning. By means of the necessary inhalation of ether, and by other means as by heat, alcohol by the mouth, or hypodermically, the risks of shock can be abated and the chances of recovery are, on the whole, better than if operation is delayed until reaction has begun.

This question is, however, a very debatable one, and in this country, at any rate, we doubt whether Dr. Brown's advice will be generally followed.

As to the choice of the seat of operation, Dr. Brown calls attention to the well-known difficulty of distinguishing viable tissues from those in which vitality has been crushed out. Speaking generally, it is advised that no doubtful tissues should be left in the flaps, but states that sometimes a skin flap may be left, though its vitality be doubtful or worse, in order to serve as a cover for granulations in the future.

Mr. Mayo Robson describes a new plan for approximating the fragments of a broken patella. The joint is first aspirated and then two long steel bonnet pins are passed transversely through the skin and muscle, just above the upper fragment, and similarly through the patella tendon just below. In inserting the upper needle, care is taken to draw the skin well up over the upper fragment.

By pulling together the projecting ends of the pins, the fragments can be easily approximated; the ends are then cut off to a convenient length, and the limb is dressed aseptically.

Mr. Mayo Robson has put on record a case which he believes to be the first example of tendon grafting. The case was one of severe laceration of the hand and forearm, and a long piece of hanging tendon from the flexor aspect was attached at one end to what remained of the extensor tendon and the other end to the extensor muscles. No sloughing occurred, and good movement was obtained.

Football players are stated by Mr. Wherry, of Cambridge, to be familiar with an accident which goes by the name of "the poop." The derivation of the word is obscure, but the injury seems to be a bruising of the quadriceps extensor muscle, with a varying amount of effusion into the knee joint. Mr. Wherry considers that the muscle is, as a rule, bruised by a direct blow, not lacerated, as recovery is generally perfect. He advises that no splint should be applied, but that after a few days' rest, with evaporating lotions, the front of the thigh should be supported with adhesive strapping.

The extended position is advised by Dr. C. Lauenstein as the result of six years' experience, in cases of T and other fractures about the

elbow joint. He holds that the ordinary flexed position on a rectangular splint favours a permanent loss of complete extension.

In dislocation at shoulder, Kocker's method is reported by Dr. Powers, of New York, to have been successful on a first attempt, in ninety-eight out of one hundred and twenty-nine cases, without pain and without an anæsthetic.

The manipulation is as follows: The flexed arm is grasped at the elbow with one hand and the wrist with the other brought close to the chest with slight traction, the patient lying on his back, with an attendant holding the opposite shoulder down. The arm is then rotated outwards until it is in line with the body; the elbow is brought forwards on to the middle of the chest, and then the hand is carried over to the opposite shoulder.

The same surgeon reports the successful treatment of a case of supra acromial dislocation of the clavicle. The bone was kept in place by a very simple method. After the dislocation was reduced the elbow was flexed and the forearm placed across the body. A small firm pad was placed over the outer end of the clavicle, and the centre of a strip of rubber plaster, three inches wide, was applied beneath the flexed elbow, and the ends carried up the back and front of the arm and chest, and crossed over the shoulder at the seat of dislocation.

Reduction of backward dislocation of the finger upon the metacarpus.

Mr. W. H. Battle recommends that manipulation be first tried by the "dorsi flexion" method, *i.e.*, by tilting the displaced phalanx up until it stands upon its articular end, placing both forefingers so as to hold it in that position, and at the same time pressing against the distal end of the metacarpal bone. Under firm pressure with the thumb against the base of the dislocated phalanx, it can be slid into place, generally with ease; force is not required. An anæsthetic will probably not be required, but in case of failure, the manipulation should be repeated under it. If reduction cannot thus be effected, subcutaneous section of the glenoid ligament from the back of the joint must be performed (or, in the case of the thumb, tenotomy of one or both heads of the short flexor). In the worst cases the joint must be opened antiseptically, and the reduction effected after the replacement of the long flexor tendon, or of the ligaments.

Lastly, excision of the head of the metacarpal bone may be necessary after severe compound injuries, or after anchylosis following injury.

REFERENCES.—Cheevor, "Therap Gaz.," Dec., 1888; Ogston, "Med. Chron.," Nov., 1888; Report of Clin. Soc., "Lancet," June 1,

1889; Wherry, "Ibid," Oct. 6, 1888; Battle, "Ibid," Dec. 29, 1883; Lauenstein, "Cent. für Chir.," Nov. 24, 1888; Powers, "New York Med. Jour.," Feb. 16, 1889.

Dr. Manley discusses the surgical aspect of the operation of wiring the fragments of a fractured olecranon, and instances two cases, one compound, and the other simple, in which good results were obtained. In his account of the compound one, which is described at length, we noticed that after the fragments were wired, the arm was put up on a rectangular splint, a position which one would think would produce an unnecessary strain on the parts. The wound suppurated and the bones were exposed. The patient had constitutional syphilis at the time of the accident, but it did not appear to retard the process of union. Fair movement eventually was secured. ("New York Med. Jour.," Jan. 5, 1889.)

Prof. Annandale ("Brit. Med. Jour.," Feb. 16, 1889) has described the operation of removal of portions of bone for the purpose of promoting healing of wounds and ulcers, or to relieve cicatricial contraction. He considers that it is only in rare cases that this procedure will be useful as a primary operation, but in cases where a bone or bones are by their pressure preventing cicatrisation, it may be desirable to (1,) Remove a portion of bone not involving its entire thickness, or (2,) Remove a portion of the entire thickness of the bone, or in the case of the forearm or leg of the two bones; or (3,) Completely or partially excise a joint when the sore or contraction involves the soft parts in its neighbourhood. Again, it may be necessary to excise a portion of one or other of the bones of the forearm to secure an approximation of the ends of the companion bone when it has suffered some loss of substance.

Mr. Jordan Lloyd enumerates the essentials of dry antiseptic dressing, as practised by himself on the lines laid down by the late Mr. Sampson Gamgee. He mentions the antiseptic cloths, the preparation of the part to be operated on, the personal care of the hands of the surgeon, of his assistants and nurses, the aseptic condition of the instrument; the directions he gives being those which are usually carried out in modern cleanly surgery. Sponges we are glad to see he does not use in general surgery, but he does not mention that in abdominal surgery or in some deep explorations, they can hardly be dispensed with.

Absolute dryness of the flaps in such cases as amputation is not in practice attained, and the presence of small blood clots does not as a fact prevent primary union, still the drier the wound is the better, provided that the operation is not unduly delayed. When the wound

is ready to be closed, its surfaces are covered with finely powdered **Boracic Powder,** rubbed gently but thoroughly into every part, as meat may be salted ; any quantity of the acid may be employed. Large rubber drainage tubes are inserted as required, and the wounds sutured.

The drainage tubes are left long enough to reach outside the dressings, so that free discharge can take place from them, and they themselves can be removed without further disturbance. The dressing consists of a layer of boracic acid in powder, a single strip of lint soaked in boracic acid and glycerine, two or three thicknesses of Gamgee absorbent tissue, a layer of gutta-percha tissue, and the whole secured by gauze bandages.

The drainage tubes are withdrawn at the end of forty-eight hours, but the dressings are left otherwise undisturbed for periods varying from one to four weeks, unless some sufficient reason for inspection exists.

Mr. Lloyd thinks that the use he makes of dry boracic powder is a most important element in the success of his method of dressing. (Lloyd, "Brit. Med. Jour.," Jan. 19, 1889.)

INSANITY. *Lionel A. Weatherly, M.D.*

The event in the past year of the greatest interest to British psychologists has been the passing of the Lunacy Acts Amendment Bill. That it is almost entirely a lawyer's bill must be patent to any one who reads it. No doubt it would have been wiser if a conference had taken place between the framers of the bill, the lunacy commissioners, and some of the leading medical men in the department of mental medicine. We should then have had an Act of Parliament which would probably have been universally accepted, instead of one which, with regard to many of its clauses, has been almost universally condemned by those who know anything of the treatment of mental disease.

We must, however, here confess that after carefully reading through this bill we are not so ready to utter a strong and wholesale condemnation of it ; and we think when the general practitioner and the public rightly understand the clauses dealing with the admission of private patients into asylums, that they will recognize that the much-talked of publicity is only a light shadow, and that there is in reality no great substance or complaint. The application to a county court judge, to a stipendiary magistrate, or to a justice of the peace, is a strictly private matter, and these persons are bound by an oath to secrecy, just as the present visiting justices of asylums are ; so that in reality there will be no more so-called publicity than at present.

No doubt for some little time after the coming into operation of this

act there will be a diffidence on the part of the public in placing their insane relatives quickly under proper treatment, but we firmly believe this will soon pass off.

Again, the clauses protecting medical men against "persecution" (for there is no other word for it), are most just and good, and will be readily appreciated by many who have recently felt compelled to withdraw justifiable certificates, from fear of loss of money, if not possible loss of reputation. These "protection clauses" came into operation directly the bill was passed.

Dr. Needham sometime since pointed out in a most able address on the subject that those who made the bill had filled it with curious anomalies, and that to him their one idea seemed to have been, "that in the diagnosis of morbid states of the mind, the non-medical class had in its ignorance a better claim to public confidence than those who had devoted the trained intelligence of their lives to the discrimination of such diseased conditions."

That this is a true cause for complaint cannot be denied; and yet we cannot well see how the public who have clamoured for lunacy reform would have accepted anything less than the clauses referring to admission of patients, though we are well aware that this said clamouring public are almost wholly composed of persons who know nothing about lunacy and have not yet been troubled with that difficult-to-be-dealt-with *bête noir*, an insane relative. When a deputation of the College of Physicians waited upon the Home Secretary with recommendations with regard to the bill as drawn up by the Committee of the College, Mr. Matthews gave them at once no hope of any alteration in the clauses dealing with the intervention of a judge or justice, telling them that as these clauses had been agreed to by three successive chancellors they could neither be abandoned nor altered.

Until, however, we have a new Lunacy Bill drawn up after prolonged conference between legal and medical representatives of opinion, we shall not have an Act of Parliament in which, instead of treating mental disease as a crime of which relatives and doctors accuse a patient, and of which they have to be proved guilty by a county court judge, a stipendiary magistrate, or a justice of the peace; insanity will be looked upon as a disease, the early treatment of which is the one great factor conducive to recovery; until such a bill comes into operation, we feel sure our recovery rate will show but very small increase in good results.

With regard to the outcries on the part of a totally ignorant public against private asylums, we cannot do better than quote from a

memorandum drawn up on this subject by a committee especially appointed.

(1,) A few isolated cases of alleged wrongful admission or detention in *private* asylums, which have not been legally substantiated, have no doubt occurred, but similar allegations have been made quite as frequently in relation to *public* asylums.

(2,) Objection to private asylums has been raised on account of an hypothesis that pecuniary interest acts inimically to the patients. This is hypothesis only and can be answered by other hypotheses and by facts. A good reputation is in this, as in other callings, more valuable than any present pecuniary gain; and considering the delicate nature of the business carried on, it is really vital to the proprietor that nothing should be done by him to injure his reputation; this tends to ensure kindly personal and domestic treatment and anxiety to cure as quickly as possible, for a reputation for cure brings its own reward in new patients.

(3,) It has been suggested that pecuniary interest leads to patients being detained longer in private asylums than is necessary.

This is disproved entirely by the facts as to the frequency of discharges of patients, which from private asylums are per annum 28·60 per cent. as compared with 15·11 per cent. from County and Borough Asylums and 16·77 per cent. from Registered Hospitals, according to the report of Messrs. Whinney, Harlbatt and Smith, the accountants of Old Jewry, dated 30th April, 1889.

The Turkish Bath in Insanity.—Dr. Baker, the able superintendent of the York Retreat, has made most careful notes of ten years' experience in the use of the Turkish Bath, in the treatment of mental ill-health; and in a paper read at one of the Association Meetings this year he spoke of its uses under two headings: (1,) The Curative; (2,) The Palliative.

1.—*The Curative.*—(*a*,) In various forms of alcoholic insanity, including insanity fostered by the abuse of morphia, chloral and other narcotics, the bath has a most soothing effect, and by its power of elimination does much to soothe irritability, allay the insane suspicion, and in every way to help forward recovery; (*b*,) In partial dementia of middle life, in men who are of a gouty diathesis, by the use of the bath the skin is seen in healthy action, the kidneys are greatly relieved of their work; and Dr. Baker has seen cases of this kind, where the mental powers seemed to be steadily failing, gradually right themselves under this treatment, enabling the patients to return, with all their former power, to their homes and their duties; (*c*,) In those cases of melancholia accompanied by a dry skin, a dis-

ordered and congested condition of the liver, he has found it most useful; (*d*,) In Puerperal Insanity. Here again its power of more or less rapid elimination of morbid material in the blood must of necessity do good, though, as Dr. Baker points out, in all cases in which he uses the Turkish Bath as an agent in the curative process, he supplements his treatment with other and usual medicinal means.

2.—*Palliative.*—(*a*,) In Epileptic Insanity. In the restless excitement of the epileptic lunatic, both before and after a fit, it is most useful, and no one seems to appreciate its utility more than the epileptic patient, after having tried it; (*b*,) In cases of general paralysis of the Insane; (*c*,) In other cases of chronic insanity it is not only a means of health; it not only helps to soothe and to relieve irritability, but it also becomes a means of occupation, looked forward to and enjoyed by the poor creatures, who have little in their lives to make life worth living.

Dr. Manning, the Inspector General of the Insane in New South Wales, questions whether, considering the marked dryness of the hair and skin, and the malodorous character of the cutaneous secretions of the insane, our knowledge or practice of hydro-therapeutics is either creditable or satisfactory, and he doubts if the Turkish Bath is employed as frequently or as fully as it might and should be. (See article "Thermo-therapeutics," p. 70.)

Massage.—Dr. Savage considers the craze for this form of treatment is being pushed too far, and that there has been a great tendency to treat all cases of neuroses by massage. He contends that it is rarely useful in the general run of cases of insanity. In cases of emotional self-consciousness it is bad, as in such cases both the solitude and the bed are contra-indicated. In hypochondriasis it is unsuitable. In cases of mental depression, associated with physical weakness, loss of flesh and deficient action of the gastro-intestinal tract it may, however, do good.

Dr. Cassidy, the superintendent of the Lancaster Asylum, has tried massage with good effect, particularly for melancholia, and predicts that in a few years it will be very generally used in our asylums. He thinks it ought to be used in conjunction with hot and cold douches, as at Aix-les-Bains and Bath.

Dr. W. S. Playfair, in an article in the "Psychological Journal," speaks with great confidence of the treatment of cases of morphia, chloral, or alcoholic excess, by a course of systematic treatment, by complete rest and isolation, accompanied by massage and overfeeding. He has been surprised to find the ease with which, under this form of treatment, the deleterious drugs, etc., have been left off and the small amount of discomfort entailed.

Medicines.—With regard to the various drugs used as hypnotics and calmatives we have but little to say, as there has been practically no alteration since last year. Personally, we still maintain that in many cases **Hyoscine** has the most satisfactory effect of any drug yet used for these purposes. That it does not suit some persons, that it even does temporary harm to the mental condition of some patients, we will not gainsay; but when individual experience has taught one for whom to prescribe it, we are more than satisfied with its utility, and we look upon this drug as a sheet anchor in the treatment of certain of the cases coming under our care. With regard to the mode of prescribing it and the doses in which it is given, we must refer our readers to our last year's article. Hypodermically, we have been using during this year the tabloids of hyoscine hydriodate, $\frac{1}{75}$ grains, manufactured by Messrs. Burroughs and Wellcome, and have been very pleased with this preparation.

Drs. Colman and Taylor, the pathologist and house physician respectively of the Vatimen Hospital for the Paralysed and Epileptic, give their experience of the frequent employment of this drug, and in the large majority of the cases the action of it has been most beneficial. The cases they gave it in with successful results were those of epileptiform convulsive and noisy violence; afterwards in general paralysis, maniacal excitement from tumour of cerebellum, other cases of excitement in general paralysis, epileptic violence, and in the status epilepticus. They say that in their hands this drug never failed to act as a prompt and powerful sedative in cases of mental excitement. They incidentally mention that we said so much thereon in last year's article, that this drug must not be confounded with hyoscyamine.

Sulphonal, which we have tried in a few cases in which we thought it might be useful, has disappointed us. In the insomnia of a hypochondriacal melancholic, we found it of no use, whilst it seemed to upset the digestive organs. In cases of mania we believe it to be absolutely useless. No doubt in some simple uncomplicated cases of insomnia it may do good, but these are cases that rarely come under the care of an asylum superintendent.

Writing more generally with regard to the medicinal treatment of insanity, we think the question asked by Dr. F. N. Manning in his address in psychological medicine, is one which we should thoroughly take to heart, and seriously ask ourselves: Considering the marked trophic changes in many forms of insanity, do we employ the alteratives such as arsenic and the milder mercurials, alkaline salts, and the nervine and vaso-motor tonics and stimulants with sufficient discrimination, and for sufficient periods of time?

Hypnotism, as a form of treatment in cases of insanity, in our opinion has not yet been proved by facts to be of sufficient value so far, and we do not think it would be beneficial to make any lengthened remarks upon its use.

The reviewer of a new work (by Dr. B. A. Stephens) on this subject, considers that in cases of hysteria and neurasthenia, the employment of hypnotism and suggestion may be useful as an adjunct to diet, physical and psychical repose, hydro-therapy, electricity and massage; and last but not least, the removal of the patient from his or her deleterious surroundings and influences. (See also "Hypnotism," "Insomnia," and in Part III, "Lunacy Acts Amendment Bill.")

Synopsis.—(Vol. 1889, p. 300) **Galvanism, Amylene Hydrate** grammes ij to v; **Sulphonal,** ij grammes; **Paraldehyde, Hyoscine Hydrobromate,** ♏iv of ½% solution twice or thrice daily, and increased if necessary, and may be combined with **Sp. Ammon. Aromat.** if circulation be slow and feeble. **Hyoscine Hydrochlorate,** gr. $\frac{1}{75}$ hypodermically. Wet-packing is useful therapeutically, and as a means of restraint.

INSOLATION. *Charles L. Dana, M.D., New York.*

Rules for Treatment.—Dr. R. Ellis sums up a paper on this subject in the following propositions: (1,) Every ambulance should carry ice, a sprinkler and a pail, and the patient should be treated on the spot till the ambulance surgeon feels it safe to move him; (2,) Every patient should if possible be stripped, a sheet or blanket covering him when carrying him to and from the ambulance; (3,) The thermometer should be placed in the rectum and kept there during the entire treatment, the advantage of knowing just the temperature at any minute being vastly more useful than the slight reduction gained by enemas of ice-water; (4,) If the heart is weak, and especially if any heart depressant has been given, as digitalis, quinine, or antipyrin, the patient should be kept as quiet as possible, and under no circumstances should his head or body be raised; (5,) If the patient has a very high temperature (108° to 110° F.), care should be taken not to reduce it below 102° to 103° too hurriedly, as the tendency in some cases is to fall below normal; (6,) If a spasmodic stage occurs, and the patient has locked jaws and tightly pressed lips, the mouth-gag should be inserted and the lips held open if necessary; (7,) The ice-bag to the head is useless save in subsequent treatment; (8,) The judgment of the physician must decide when to bleed, to "rub," to give stimulants, to stop cold treatment, to remove to bed; (9,) The thermometer in the rectum is the best basis for all treatment. ("The Med. Record," Aug. 11, 1888.)

INSOMNIA. *Charles L. Dana, M.D., New York.*

The contributions to the treatment of insomnia in the past year have consisted chiefly of experiments with sulphonal and its latest successor chloralamid. **Sulphonal** has established itself as a very useful, substantial, but not very certain drug. When it is good it is very good, but it sometimes fails to act or causes disagreeable after symptoms, such as vertigo, mental confusion and gastric distress.

Chloralamid is a substance described by Dr. Rabow ("Cent. Blatt. für Nervin.," August 1, 1889). It is colourless and odourless, with a faintly bitter taste, and is given in doses of 15 to 60 grains, averaging 45 grains.

Dr. Hagen and Dr. Hüfler, assistants in the medical clinic in Erlangen, have brought forward a number of observations on the use of chloralamid ("Pharm. Post," Aug. 8, 1889), in which they confirmed the favourable opinions given previously. They employed it in doses of 30 to 45 grains, and found it especially efficacious in cases of insomnia depending upon nervousness, and, in fact, most cases of sleeplessness which do not depend upon pain. These authors report in the "Wien. Med. Blätt.," Aug. 1, 1889, that they have experimented on twenty-five patients and three healthy individuals, giving in all one hundred and eighteen doses.

Sleep was produced in twenty-six cases, and only failed in two, of which one was a case of paralytic dementia and the other an advanced case of phthisis.

In Prof. Strumpell's clinic 30 grains were generally found sufficient, especially in women, although occasionally 45 grains were required, given in capsules or dissolved in wine. No disagreeable effects on the heart, respiration, temperature, digestion or kidneys, were ever noticed. ("Münch. Med. Woch.")

In the "Deut. Med. Woch.," Aug. 1, 1889, Dr. Reichmann publishes a paper on the use of chloralamid. He asserts that it will sometimes relieve pain, and that it has no effect on the circulation.

In the "Deut. Med. Woch.," Aug. 8, 1889, Dr. Peiper publishes a a paper on the same subject, giving notes of twenty-four cases in which it was used as a hypnotic, administered in the form of a powder, followed by milk or weak coffee.

In four cases it was given as an enema, and the latter mode of application was found very satisfactory, no irritation being produced even from frequent repetition, although its action was somewhat slower than when given by the mouth.

Dr. Peiper likewise found that in nearly all cases 30 to 45 grains were quite sufficient to produce sleep.

Dr. U. Lettow has written an inaugural dissertation upon this drug.

Dr. Eugene Kny ("Thérap. Monat.," No. 8, 1889), reports favourably on chloralamid after using it in thirty-one cases.

Drs. Hagemann and Strauss tried it in fifteen cases ("Berlin Klin. Woch.," No. 33, 1889), with fairly good results.

In the "Thérap. Monat.," Jan., 1889, Dr. Kny, of Strasburg, reports the results of the administration of the **Muriate of Hyoscine** in subcutaneous injections in eighty-eight different cases occurring in the Strasburg clinic for nervous disease. In 82·2 per cent. the result was successful, sleep lasting from six to eight hours and occurring within an hour after the administration of the dose. The majority of failures occurred in cases where the insomnia was not accompanied by any motor disturbances; while, on the other hand, where there were marked motor symptoms, as in mania and paralysis, the result was the most favourable. The dose was from $\frac{1}{125}$ to $\frac{1}{64}$ gr., although sometimes the dose had to be increased on account of the patient becoming accustomed to the drug. Dr. Kny gives the preference to hyoscine for a hypnotic in case of great excitement; while sulphonal is preferable in cases of insomnia not so accompanied by motor disturbances. In paralysis agitans and multiple sclerosis hyoscine proved to be a palliative remedy.

Dr. Keniston ("Amer. Jour. of Insanity," Oct., 1888), has given **Paraldehyde** five hundred and forty-six times, with the following results: In four hundred and seven instances sleep of from four to eight hours' duration was obtained; in thirty-nine instances sleep of not more than three hours followed, and the number of complete failures was ten. Taking the total number of administrations, the average amount of sleep produced was 5·10 hours. The average dose was 1 drachm, the maximum in one night being 3 drachms, given in two doses about three hours apart. In none of the cases was any irritation of the mouth, throat, or stomach observed. The appetite was unimpaired. It is recommended to be given in the following formula:—

R Paraldehyde Mucil. Acaciæ	āā ℥j	Aquam ad	℥ij

M.

and in the form of suppositories, which contain 15 grains, the drug being first solidified by admixture in a water bath with 25 per cent. of paraffin, and afterwards introduced into the suppository mould. **Urethan** is usually considered untrustworthy as a hypnotic, but Adam in thirty cases found it very efficient, perhaps because he gave large doses, 1 to 5 grammes. ("Annals Med. Psychol.," 1889.)

Uralium is the name of a new hypnotic, discovered by Poppi, of Bologna. This substance is produced by the combination of chloral hydrate with urethan. From experiments on animals and on the human subject, Signor Poppi concludes that uralium induces sleep more quickly and more certainly than any other known hypnotic. We have seen no clinical reports upon this drug.

REFERENCES.—Field, "Therap. Gaz.," 1889, p. 591; Verhoygan, "London Med. Recorder," May 20, 1889; Lofacond, of Palermo, "Therap. Gaz.," 1889, p. 485; Garnier, "Amer. Medico-Psychol., Jan., March, 1889; Griffith, "Therap. Gaz.," 1889, p. 323.

Synopsis.—(Vol. 1889, p. 307.) **Boldo-glucine**, grs. xxij to ʒij; **Methylal**, ʒiss to ʒj; **Sulphonal**, grs. xv to xlv; **Amylene Hydrate**, grs xx to ʒi; **Somniferin**, in doses rather less than **Morphine**; **Antipyrin**, **Amorphous Hyoscyamine**, grs. $\frac{1}{50}$ to $\frac{1}{40}$, or more; **Hydrochlorate of Hyoscine**, gr. $\frac{1}{250}$ to $\frac{1}{100}$; **Strychnia** for insomina of over work. **Quinine**, kneading abdomen and application of hot wet compresses in malarial insomnia.

INTERMITTENT FEVER.

Synopsis.—(Vol. 1888.) **Alstonia** (p. 11); **Ergotine** (p. 48); **Hydrastis** (p. 62); **Lantanine** (p. 72); **Michelia Niligerica** (p. 78); **Picrate of Ammonium** (p. 83); **Pyridin** (p. 85); **Syringa Vulgaris** (p. 102).

(Vol. 1889, p. 61.) **Tincture of Phyllanthus Niruri**, ʒij in morning in inveterate attacks with infarctus of spleen and liver.

INTESTINAL OBSTRUCTION. *A. W. Mayo Robson, F.R.C.S.*

For classification, diagnosis, and treatment, see "Annual" for 1889, p. 308.

Mr. Jonathan Hutchinson in his "Achives of Surgery," 1889, advocates the use of abdominal taxis, which he describes as follows: "The first point in abdominal taxis is the full use of an anæsthetic so as to obliterate all muscular resistance. Next (the bowels and bladder being supposed to be empty), the surgeon will forcibly and repeatedly knead the abdomen, pressing its contents vigorously upwards, downwards, and from side to side. The patient is now to be turned on his abdomen, and in this position to be held up by four strong men and shaken backwards and forwards. This done, the trunk is to be held, feet uppermost, and shaking again practised directly upwards and downwards. Whilst in this position copious enemata are to be given. The whole proceedings are to be carried out in a *bona fide* manner." Half or three-quarters of an hour is spent in the process. Several cases are described illustrating the efficiency of the method.

In the "Wiener Med. Blatt.," No. 12 and 13, 1889, will be found a very instructive paper by Dr. Nothnagel, on the treatment of obstruction of the bowel, based on clinical and experimental researches. He concludes, that fæcal vomiting is not caused by reversed peristalsis,

but by the fluid above the obstruction being forced in the direction of least resistance; that the peristaltic movements are not caused by constriction, but by distension of the bowel; that they may occur when there is no stenosis, as in ileus paralyticus; that iced soda water or an 8 per cent. solution of common salt in water, form the most efficient enemata. He recommends that, except in the case of fæcal impaction, purgatives should be avoided, no food or fluid should be allowed to enter the stomach, massage should never be employed, voluminous injections should be administered, and that **Opium** in large doses should be given to relieve pain and prevent collapse, but that if relief does not come soon, a consultation with a view to operation should be held.

At the Congress for Internl. Medicine, held in April, 1886, at Wiesbaden, an interesting discussion, on "Ileus and its Treatment," took place; (see "Med. Chron.," p. 463, 1889). A new point in diagnosis was brought forward, that indican in the urine means as a rule, obstruction of the ileum and that the absence of indican, except in severe cases of incarceration, ind cates that the obstruction is in the large intestine; there is also no indican when the obstruction is very high up in the small intestine.

Dr. Senn's method of inflation by means of hydrogen gas has been found useful in the detection of the site of obstruction; (see paper by Dr. Dixon in the "Weekly Med. Review" for Oct. 13th, 1888). The method of short circuiting an obstruction advocated by Dr. Senn, instead of making an artificial anus, has been successfully adopted by Dr. Meyer, in a case of obstruction in the colon (New York Surgical Society, Oct. 1888).

On Feb. 23rd, 1889, Dr. B. W. Richardson read a paper on the subject of intestinal obstruction, before the Medical Society of London. He summarised his conclusions in the following manner: (1,) In all cases of intestinal obstruction the use of minor measures of treatment was correct until the supervention of fæcal vomiting; (2,) When fæcal vomiting commenced, the abdomen should be opened and explored; (3,) Obscurity of the diagnosis ought not to prevent early interference, because *(a,)* an apparently complicated case often turned out to be extremely simple, and *(b,)* even if complicated relief might be given without greatly increasing the danger to the patient; (4,) Clinical experience afforded too little evidence of spontaneous recovery for that method of cure to be trusted to; (5,) The phenomenon of fæcal vomiting indicated more than intestinal obstruction; it was itself a toxic disease, and demanded urgent treatment; (6,) The supervention of collapse did not forbid operation.

In the "Lancet" of April 20th, 1889, will be found the report by the author of a case of acute intestinal obstruction of ten days' duration in which laparotomy was performed, and an internal hernia successfully reduced; the final remarks of the paper are as follows: The conclutions which I would draw from this and other cases coming under my own care, from *post-mortem* examinations, and from recorded cases, are: (1,) That in chronic cases—that is, where obstruction is the prominent symptom, there being no sign of strangulation—medical treatment may relieve, or if the obstruction be due to fæcal accumulation, may cure; but that in many such cases colotomy or some other operation will be so plainly indicated as to leave no doubt concerning what should be done; (2,) That in cases where acute symptoms supervene on chronic, medical and expectant treatment may at first be wise, but that if relief do not come rapidly, laparotomy should be performed; (3,) That in initially acute cases laparotomy should be performed without loss of time, delay being as dangerous as would the postponement of kelotomy in strangulated hernia.

Synopsis—(Vol. 1889, p. 310) **Opium, Inflation** or **Enemata** in acute intussusception. **Rest, Belladonna, Enemata** and **Morphia** subcutaneously in chronic cases; **Peptonised Enemata** and **Nutrient Suppositories** if vomiting is persistent. Sucking of ice will relieve patient. **Metallic Mercury**, 7000 to 4500 grs. as purgative in fæcal accumulation; **Faradism** for paresis of bowel; **Massage** of abdomen; **Inflation** by **Air, Carbonic Acid Gas** or **Hydrogen.**

INTESTINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

In the "Annual" for 1889 will be found a synopsis of, and diagrams illustrative of Dr. Senn's valuable contributions to the surgery of the intestines. The experiments have been repeated in England during the year by Messrs. Jessett and Victor Horsley. To sum up the results of operations performed by Dr. Senn and Mr. Jessett it would be found to be as follows, namely:—

	Cases.	Deaths.		Mortality. per cent.
Gastro-enterostomy	6	1	=	16·6
Jejuno-ileostomy by approximation discs ...	13	1	=	7·69
Jejuno-ileostomy by Czerny-Lembert suture ...	7	5	=	71·5
Enterorrhaphy by invagination without omental flap	4	3	=	75·6
Enterorrhaphy by invagination with omental flap	12	3	=	24·99
Ileo-colostomy by implantation	9	2	=	22·2
Ileo-colostomy by lateral apposition and Czerny-Lembert suture	7	2	=	28·6
Ileo-colostomy by apposition with approximation discs	3	1	=	33·0

In the "Med. Chron." for 1889, p. 231, will be found the account of a case by Dr. Penrose, of resection of bowel for epithelioma of the descending colon, in which the artificial anus, made at the time of

operation, after the preliminary application of Dupuytren's enterotome, was closed by the introduction of an elliptical disc of rubber, $\frac{1}{16}$ of an inch in thickness within the artificial anus, on the plane of the parietal peritoneum, thus forming a floor for the abdominal opening, and protecting the intra-abdominal line of incision from fæces and flatus. The four silk ligatures were passed through the parietes, in order to hold the rubber disc in place. The freshened edges of the artificial anus were united by sutures of silkworm gut. Bowels moved on fourth day. Sutures removed on the tenth day, and the silk ligatures attached to the rubber disc were cut. The disc was discharged from the rectum about the sixteenth day. Patient seen, and reported to be well three months after this operation.

In the "Med. News" for June 1st, 1889, will be found a description by Dr. Abbe, of the cure of a fæcal fistula by intestinal anastomosis, apposition being effected by means of catgut rings in place of Dr. Senn's bone plates. The rings are made as follows: A moderately heavy juniper catgut is wound closely on a test tube and soaked in hot water. After awhile it is straightened out, wound again loosely, and soaked in hot water once more until it ceases to twist. Eight or ten turns are now made with this gut, over two pins stuck in a cork two inches apart, making a bundle somewhat smaller than a lead pencil. This is tied in four places with fine silk, to secure the strands being even while being wound round like a cable with a continuous piece of the same catgut. The end of the piece is secured, by threading it with a Hagedorn needle, and transfixing the whole bundle obliquely with it at the place of finishing. Six strong but small braided silk threads are now fixed to each ring, equidistant, on the face looking toward the other ring, which is to be laid against it. No knots are used. A needle, carrying the thread, pierces the ring between the strands; all but eight inches of the thread being drawn through and wound one and a half times round, sinking between the encircling catgut; it pierces the ring again and is cut off. Curl the threads up between the oval, tie the rings tightly between two glass slides, so as to compress them, and preserve in alcohol. In using the rings, let each thread have its own needle. Pierce intestine from within outward, less than a quarter of an inch from its cut edge. The ring should be laid on a damp folded towel, while the operator quickly pulls the threads through and passes the rings into the interior of the bowel. When the threads are tied and cut off, the apposition is perfect, but by a quickly made running suture outside all, a half inch of peritoneal surface is at once secured beyond the possibility of breakage.

At the Surgical Congress, at Bologna, Prof. Durante related a case of successful excision of the cæcum, in a woman aged fifty-six, for tubercular disease; the author said that this was only the third occasion on which the operation had been performed. The patient made a good recovery.

Mr. Kendall Franks reported at the Royal Med. and Chir. Soc., Feb. 26th, 1889, two cases of colectomy for malignant disease, and ended his paper by the following conclusions: (1,) Colectomy rarely effected a cure; (2,) As a palliative measure it was justifiable, and frequently demanded; (3,) Recurrence usually took place in the liver or mesenteric glands, and death was much easier than when the intestine was occluded; (4,) The mortality after immediate suture of the intestine and after the formation of an artificial anus was nearly equal; (5,) Immediate suture of the divided ends was preferable to the formation of an artificial anus; (6,) The death rate had been reduced in the later cases, and a further reduction might be anticipated.

References. – Jessett and Horsley, "Brit. Med. Jour.," p. 590, vol. i, and p. 169 vol. ii, 1889; Durante, "Brit. Med. Jour.," vol. i, 1889, p. 1016.

IRIDECTOMY. *W. Lang, F.R.C.S.*

Abadie has devised a new method for removing a piece of iris in those cases where, after the removal of the lens, the pupil closes in spite of iridotomies, ordinary iridectomies, etc. It is of especial use in cases of sympathetic ophthalmia. After removing the lens, and allowing the eye to quiet down, he makes simultaneously two incisions, with two keratomes, at either side of the cornea, near the sclero-corneal junction. These two openings may be as readily made with a Græfe's knife, passed across the anterior chamber, so as to transfix the cornea, and then made to cut an opening of the desired extent on either side of the cornea. This latter proceeding, the present writer thinks, will be found easier by operators not in the habit of cutting with both hands at once.

These incisions are from four to five mm. in length. A pair of iridectomy scissors, with one sharp pointed blade, is now passed in at one opening and made to cut two sections in the iris and lens capsule, so as to form a V-shaped flap. A pair of iridectomy forceps (or a sharp hook) is now passed into the opposite incision, and the apex of the flap of iris drawn out and cut off. A large triangular pupil is thus formed, which has no tendency to close.

IRITIS SEROUS. *W. Lang, F.R.C.S.*

This intractable malady has been treated in every manner, but Darier now recommends the administration of **Colchicine,** in doses

varying from $\frac{1}{30}$ to $\frac{1}{16}$ of a grain a day. At the same time he advises **Pilocarpine** injections where this remedy fails.

Synopsis.—(Vol 1889, p. 319.) Injections of **Calomel** ♏ x of 0·4% solution in **Glycerine** injected into temple for syphilitic iritis.

JAUNDICE.

Synopsis.—(Vol. 1889, p. 61.) **Phyllanthus Niruri Tincture**, ʒij, used by Hindoo physicians as deobstruent.

KELOID.

Synopsis—(Vol. 1889, p. 319.) Removal by **Electrolysis**; continued pressure, *e.g.*, by Elastic bandage.

KERATOSIS PILARIS (Lichen Pilaris).

Synopsis.—(Vol. 1889, p. 319.) **Alkaline Baths** followed by inunctions.

KIDNEY DISEASES (in General). (See also "Albuminuria," "Bright's Disease," &c.) *Robert Saundby, M.D.*

Intermittent Hydronephrosis.—The reporter has published an example of this little-known condition. The patient, a married woman, aged 47, had suffered for eleven years from a tumour on the right side of the abdomen, which had appeared and disappeared at irregular intervals, until recently, when it had recurred every few weeks. On admission there was an oval tumour on the right side of the abdomen reaching forward to the umbilicus; it was painful and tender on palpation. The urine contained a trace of albumen. After rest in bed the tumour diminished in size, but on getting up it returned. After a few days' rest it disappeared, and she was made an out-patient. A month later she was readmitted with pain, swelling, and the presence of a tumour. She was put under chloroform, and the presence of the tumour definitely made out. An aspirating needle was passed into it, and six ounces of bloody fluid withdrawn, which gave the reactions of urea; the urine passed after this operation was bloody. With rest in bed the tumour soon disappeared. On her discharge she was provided with a belt made of material called *lastin*, the front so shaped as to fit the figure, with elastic webbing sides, and laced down the back, while a pad was fixed in the belt so as to press on the hypochondrium; perinæal bands were attached to keep the belt from rising up. With this appliance she has remained well for four months ("Birm. Med. Rev.," Sept. 1889).

Landau, of Berlin, maintains that spasm of the ureter alone would not be enough to account for the largely distended renal sac, and points out how the ureter may be occluded by torsion or tension, when the kidney is abnormally movable, or when pulled upon by prolapsed genitalia with cystocele, or when the ureter is inserted at a more acute

angle. Then, the pelvis is distended until the pressure is sufficient to overcome the obstruction. With each attack it loses elasticity, and dilates gradually into a large sac, which drags the kidney downwards, thus aggravating the mechanical disadvantage of the contained fluid, for the ureter is inserted then at the top of the sac instead of at the bottom, and is also in greater measure pulled upon, twisted, or "kinked." Finally, neither the recumbent position nor manipulation may be able to effect evacuation, and the cyst becomes permanent and the kidney atrophies. ("Berl. Klin. Woch.," Nos. 47 and 48, 1888.)

Cystic Disease of the Kidneys.—Dr. Newman records the following case of cystic disease of the kidneys. The patient a man aged 46, complained of pain in the right loin for eighteen months and in the left loin for seven months. Since the latter trouble he had also noticed blood in his urine; at first very little, but gradually increased. He also complained of loss of appetite, flatulence, nausea, headache, and giddiness. A careful examination of the urine showed that there was more albumen than could be accounted for by the hæmoglobin (when this is the sole cause of albuminuria the ratio of albumen to hæmoglobin is 1 to 1·6; in this case the ratio was 3·6 to 1). Microscopically, finely granular and hyaline tube-casts were found, together with free blood corpuscles and a few leucocytes and epithelial cells. The urine from the ureters was examined separately on three occasions, Silbermann's method of compressing the ureters being employed, with the result that on each occasion the blood was proved to come from the left kidney alone. The patient was emaciated and anæmic. In both loins was a non-fluctuant swelling, rounded, slightly irregular on the surface, and rather tender on pressure. The percussion note over the swellings was dull, except towards the anterior margins, where it shaded off. By palpating deeply, the limits of both kidneys could be clearly made out. The right kidney occupied the whole space between the lower margin of the liver and the crest of the ilium, and extended outwards four and a half inches; the left was a little smaller. During the time the patient was under observation the kidneys increased in size slowly, and at no time either suddenly increased or decreased, though the quantity of urine varied greatly in amount. The lungs were emphysematous; the heart somewhat enlarged. The diagnosis lay between malignant disease and cystic degeneration. The points in favour of the latter view, which was ultimately adopted, were that both kidneys were enlarged and painful, that the blood only came from the right kidney, and that there was evidence of chronic tubular nephritis. *Post-mortem*, the kidneys weighed 28 ounces, and were both converted into a large conglomeration of cysts varying in size

and colour and closely packed together. ("Glasg. Med. Journ.," April, 1889.)

Renal Calculus, the Treatment of.—Huchard has published two cases to illustrate the relief obtained in cases of renal colic by the administration of **Antipyrin,** which he believes has a solvent action on uric acid. He gave the antipyrin in the following manner :—

℞ Antipyrin 15 grammes | Bicarbonate of Sodium 5 grammes
Divide into 30 powders.—Take one or two in the middle of meals.

Laird and other American writers extol the use of **Buffalo Lithia Water,** a natural mineral water of the United States.

The Reporter would urge the value of distilled water, but it is essential to this plan of treatment that this should form the basis of every beverage. It will not do to drink distilled water at dinner, and at breakfast to take coffee made with ordinary tap water. Distilled water must be used exclusively. Chemists are beginning to supply aerated distilled water ; Messrs. Southall, of Birmingham, supply all kinds of aerated waters and drinks made with distilled water.

The Operative Treatment of Calculous Suppression of Urine.—Dr. Ralfe and Mr. Godlee have published a brilliantly successful case of operation in a young lady, aged 26, for obstructive suppression of urine, in which both kidneys were incised and a stone removed from the ureter on one side ; the stone on the other being afterwards passed *per urethram.* Nearly a month elapsed between the two operations. The patient became eventually quite well. ("Lancet," March 2, 1889.)

The youth and sex of the patient had probably a good deal to do with the successful result. Calculous suppression usually occurs in elderly people in whom there is more or less organic kidney disease, and in whom, therefore, all operations are performed under serious disadvantages.

Suppression of Urine seven days in a child two years old.—Dr. E. P. Bernardy in a paper read before the Obstetrical Society, Philadelphia, gave the details of an interesting case. He was called in to see the child August 17, 1888. He had been ailing for a few days, and was suffering from nausea and vomiting ; bowels loose ; tongue clean, white, and flabby ; skin white ; eyes dull : pulse quick, but no fever. Pepsin mixture was ordered. The next day stomach was irritable, and he could not retain anything on it ; pulse full and quick, but no fever ; was informed that he had not passed urine for some time ; ordered spt. æther. nit., 20 drops, in warm water every hour or two. The following day the condition was about the same, but he passed a quarter of a teaspoonful of pure blood from the penis. Examination over region of bladder showed no indication of fluid. Ordered warm

digitalis and flaxseed poultice applied on region of kidneys, a bitart. potassa mixture, with infusion of digitalis internally Next day showed no improvement, and twitchy movements of the hips and lower extremities were easily started. On August 21, 22 and 23, the symptoms increased to an alarming extent, the skin being burning hot, and no urine being passed, close examination over bladder showing it to be empty. Six dry cups were applied over the region of kidneys, and five hours afterwards he passed a large quantity of clear urine. August 25, all nervous symptoms abating, he passed urine of a light yellowish colour, and a general improvement was manifest. This continued and the patient was discharged cured September 5, 1888.

Synopsis.—(Vol. 1888, p. 337.) *Pyelitis.* **Sandal-Wood Oil**, in capsules, thrice daily, with **Salutaris Water**, or **Potash Imperial**, Bitartrate of Potash, ℥ss to Aq. Oj, sweetened; **Nitro-Muriatic Acid** if oxalates are present, and this failing, a course of **Vichy Water**, half to one bottle daily, with lemon juice. *Renal Calculus.* **Distilled Water**, and **Salutaris Water**; **Sandal-Wood Oil** if much pyelitis exist; **Morphia** injections for pain. *Tubercle of Kidney.* **Quinine**; **Ol. Morrhuæ.**

LABOUR. (See "Obstetrics," also "Perinæorrhaphy.")

Synopsis—(Vol. 1889, p. 324.) For vomiting after Cæsarian section, **Strong Coffee** and hourly minim doses of **Tr. Iodi.**; **Creolin**, 2 or 3% solution as styptic and antiseptic; **Quinine**, useful for clearing uterus of retained membranes. **Ustilago Maidis Fl. Ext.** ♏ x to xx, increases the pains if present. **Strophanthus** and **Rest** for pregnant cases, complicated by mitral stenosis.

LAPAROTOMY. *A. W. Mayo Robson, F.R.C.S.*

An exploratory operation has frequently proved curative when apparently nothing beyond incision and exploration by the fingers has been effected. The following case probably explains the nature of these cures: In the "Hospitals-Tidende," 1889, Dr. Howitz describes a case of strongly adherent omentum, with displacement of the stomach and intestines. The patient had been treated for gastric ulcer, also for "the womb"; pessaries had been applied, and douching and massage of the hypogastrium practised in vain. Dr. Howitz carefully liberated the omental adhesions, so that the displaced viscera returned to their normal positions. All the pain and discomfort from which the patient had so long suffered rapidly disappeared.

For the technique of abdominal section and references to its employment in various diseases, see "The Annual" for 1889.

References.—Sinclair, "Brit. Med. Jour.," p. 793, vol. ii, 1889; Péan, "Lancet," March 16, 1889; Mayo Robson, "Brit. Med. Jour.," Nov. 30, 1889, p. 1213; Waldy, "Lancet," Sept. 28, 1889; Unjenin and Petroff, "Lond. Med. Rec.," Aug. 20, 1888; Bantock, "Brit. Gyn. Jour.," Nov. 1889.

Synopsis.—(Vol. 1889, p. 333.) **Boracic Acid Solution**, or Perchloride

of Mercury, 1 in 10,000 as antiseptics; **Atropine** gr. $\frac{1}{100}$ to $\frac{1}{60}$ hypodermically to prevent shock. If distension occur, use **Saline purge, Turpentine, Enema,** or passage of rectal tube.

LARYNGISMUS STRIDULUS. *P. Watson Williams, M.B.*

Perceval treated a series of twenty-four cases with **Antipyrin.** In his first case he gave 2 grain doses of antipyrin every hour, with the satisfactory result that the difficulty of breathing ceased and the child fell asleep. The same dose was then given every two hours, and the next day the child was running about well. With all the other cases he had the same result, with the exception of one, a child of four years and a half, in which he had to increase the dose to 5 grains before the paroxysms ceased.

LARYNX. (See also "Phthisis of.") *P. Watson Williams, M.B.*

As a palliative measure in epithelioma of larynx, Baratoux has obtained good results from the internal administration of **Thuja Occidentalis**: dose, 20 drops of the tincture gradually increased to 2 drachms. It is necessary that the tumour should be brushed every two or three days with a mixture of the tincture with glycerine.

Intubation of the Larynx.—This operation was described in our last issue and the advantages of intubation and accidents that were liable to occur in its performance briefly mentioned. Dr. Bleyer, writing in the "New York Med. Jour.," suggests the importance: (1,) Of examining, by means of forced or normal laryngoscopy, every case that is presented. Thus the presence of membranes in the glottic aperture may be detected and removed before intubating, instead of risking the forcing down of the membranes in front of the tube; (2,) Of extracting the tube *daily*, for the purpose of removing the accumulation of loose membranes, tenacious mucus, pus, etc. When the tube is extracted he irrigates the posterior nares, pharynx and larynx with a mild solution of **Bicarbonate of Sodium,** and half an hour later, before reintroduction, gives food. Of two hundred and six cases of intubation performed by Dr. Bleyer one hundred and seven were under three years of age with twenty-four recoveries, ninety-nine cases were above three years of age with fifty-six recoveries. (See "Diphtheria, local treatment of.")

Divulsion of the Larynx through the Crico-thyroid Space.—An ingenious operation has been invented by Dr. Holden as a possible alternative to tracheotomy and intubation. It seems to combine the advantages of tracheotomy without its dangers, and though it may appear to be a more formidable undertaking to the parents and friends it avoids many of the risks attendant on intubation. The divulsor is quite small, and consists of two blades hinged at the base. They may vary

from $\frac{3}{4}$ of an inch to $1\frac{1}{4}$ inch in length, from $\frac{1}{8}$ of an inch to a $\frac{1}{4}$ of an inch in width, and from $\frac{1}{16}$ of an inch to $\frac{1}{8}$ of an inch in thickness. It is curved to the shape of the larynx, so as not to impinge upon the base of the epiglottis. A handle, with a blade for

Fig. 30.

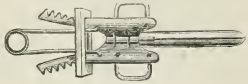


Fig. 31.

perforation, accompanies it, detachable instantly after introduction, different-sized divulsors being adapted to the same blade. This handle, however, is not essential, as the perforation can be made with a tenotomy-knife. The two blades flare at the lower end, which is to remain outside, the smaller ends when introduced, clasping the

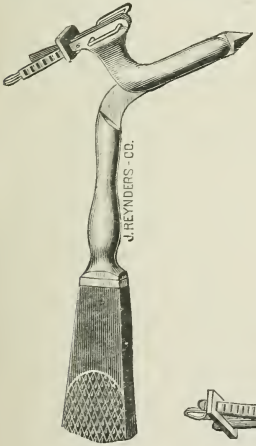


Fig. 32.

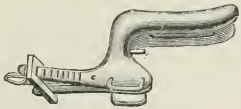


Fig. 33.

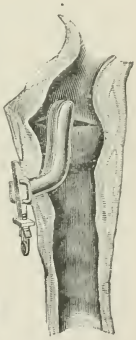


Fig. 34.

perforating knife and curving upward, while the knife-handle curves downward. Once in, the flanges are pressed slightly together, the blade is withdrawn and the divulsor is closed, passed upward into place, separated, and held by a small sliding plate. The trivial wound is thus closed by the instrument, a small portion of which alone

remains in sight. The crico-thyroid space, readily detected by the finger, can be perforated instantly; the perforation is easy, almost bloodless, and as harmless as any incised wound of the respiratory tract can be. The instrument can be withdrawn and reintroduced very quickly.

Figs. 30, 31, and 33 give the divulsor from different aspects, they hardly require any further explanation of their mechanism and action. *Fig.* 32 shows the divulsor on the handle ready for introduction. These are of the actual size adapted to the adult larynx; those for children and infants are of the same shape, but shorter.

The other drawing, *Fig.* 34, is somewhat under life size, and represents the larynx in section with the divulsor *in situ*.

Papillomata of Larynx.—Dr. Massei, Professor of Laryngology at the University of Naples, has found the curette very serviceable in the treatment of laryngeal papillomata. He generally uses Heryng's curette for laryngeal phthisis. Dr. Massei points out that all who are well acquainted with laryngoscopy know by experience that the local treatment of papillomata of the larynx is not nearly so simple a matter as it appears at first to be. Laryngeal papillomata belong to the class of neoplasms clinically called "benign," and, in fact, general health is not impaired by their presence, but recurrence and increase are so commonly met with that, notwithstanding their benign character, they may become dangerous to the patient.

We can never promise a certain result from what we see, and it should always be borne in mind that the growth may not only be reproduced, but, furthur, that it may undertake such general development, notwithstanding diligent treatment, as to endanger life if tracheotomy be not performed.

It is generally admitted that papillomata may be circumscribed or diffused through the whole cavity, but it is not generally conceded that the first form may sometimes become transformed into the second. The movable tumour, which we look at with the assurance of completely removing by means of laryngeal forceps, becomes in some not rare instances very diffused, and obliges one to continue the treatment for a very long time, or even to perform tracheotomy. If we arrive at a judgment without prejudice, we must confess that neither extirpation with forceps, nor local applications of astringents, caustics, or cautery are followed with complete success in any cases. Dr. Massei has operated with many kinds of forceps, English, French, and German, and has made in Italy several special forms of instruments. He has also tried alum, tannic acid, sabine powders, nitrate of silver, perchloride of iron, absolute alcohol, chromic acid, and the

galvano-cautery; but has never seen any evident benefit follow their use.

In conclusion Dr. Massei formulates his opinions as follows: (1,) That the so-called "Curetting" deserves greater appreciation than it obtains at present; (2,) That it is very serviceable for cases of growths situated in the subglottic region, on the vocal cords, or upon their free edges; (3,) That besides the facility of operation, portions of the tissues are successfully removed from which the growths originate, and for this reason, and also for the reason that more direct after treatment by local applications is permitted (lactic acid is preferable), this method gives greater security against redevelopment, and which is the most serious result to be feared in the treatment of laryngeal papillomata.

REFERENCES.—"Practique Médicale," June, 1888; Holden, "New York Med. Jour.," Dec. 15, 1888; Bleyer, "New York Med. Jour.," Feb. 2, 1889; "Jour. of Laryng.," Feb., 1889.

Synopsis.—(Vol. 1888, p. 350.) **Steam** and **Hot Sponges**; **Enema** of **Castor Oil** and **Tartar Emetic**, gr. ¼, every ten minutes until emesis results. **Painting with Silver Nitrate**, beginning with gr. xxx to ℥j, two or three times a week. **Lachnanthes** in chronic laryngitis. (p. 72.)

(Vol. 1889, p. 335.) In acute laryngitis of professionals use an **Emetic**, **Rest**, **Sucking of Ice** and **Cold Compress** continually. In chronic cases, **Sulphate of Zinc Spray** (grs. ij to ℥j); inhalation of **Tinct. Benzoin** if hoarseness comes on while using the voice, or **Chloride of Ammonium Tablets** every fifteen or twenty minutes, and a **Carbolised Spray** three or four times daily; sucking tablets of compressed **Chloride of Ammonium** with **Borax** or **Chlorate of Potash**. **Cocaine** applied to interior of nose, and **Chromic Acid** to mucous membrane if thickened. In erysipelas of larynx, ice internally and externally; **Corrosive Sublimate Spray**, 1 to 2000; artificial feeding in case of dysphagia; **Quinine** and **Stimulants** for collapse. Tracheotomy may be required. In laryngeal phthisis, rest is important; an antiseptic atmosphere, *e.g.*, by Coghill's Oro-nasal **Respirator**, impregnated with a few drops of **Creasote**, **Carbolic Acid**, **Menthol**, or **Iodine**, singly or combined, and used several hours a day; local sedatives and antiseptics, *e.g.*, **Menthol**, 20 % in **Olive Oil**; application of 2½ to 5 % solution of **Cocaine** to relieve pain while swallowing food. Tracheotomy; application of **Lactic Acid**, 40, 60, or 80 %, using **Cocaine** first. Scraping with sharp spoon before applying **Lactic Acid** gives good results; **Menthol** dissolved in **Olive Oil**, v parts. For nodules of the Vocal Cords apply **Nitrate of Silver**, **Chromic Acid**, or the **Galvano Cautery**; some disappear under rest and use of mild astringents.

LEAD COLIC.

Synopsis.—(Vol. 1889, p. 45.) **Hyoscin**, gr. $\frac{1}{100}$, was useful in some cases.

LENTIGO (FRECKLES).

Synopsis.—(Vol. 1889, p. 341.) Application of pure liquid **Carbolic Acid** to each spot. Electrolysis, not inserting the needle deeply. **Unna's Paste**;

℞ Zinc Ox. ʒij, Bis. Oxy-chlor. ʒss, Hydrarg. Perchlor. gr. iij, Dextrin. Aq. Dest. āā ʒij, Glycerine, ʒiij, M. Apply once daily.

LEPROSY. *Alexander Crombie, M.D.*

The treatment usually followed in India is by means of **Gurjun Oil** emulsion, both internally and externally, along with a generous diet. When this treatment is carried out efficiently, and especially when the inunction is practised for four or six hours daily, an unquestioned improvement takes place in the condition of the leper. His sores heal, his skin becomes more sensitive, and his general health improves; but there is no real cure. The patient is still a leper, and falls rapidly back into his former condition when the irksome treatment is discontinued. Similar benefit seems to result from the use of **Chaulmoogra**; in one case marked improvement followed the use of this oil as a dressing to the sores, and 6 grains of the seed, beaten into a pulp, three times daily internally. The writer has under observation a case of leprosy in a European which has received decided benefit from native treatment, which is probably identical with this.

REFERENCE.—Mouat, "Lancet," Aug. 3, 1889.

Synopsis.—(Vol. 1889, p. 341.) **Chaulmoogra Oil** in emulsion, beginning with ɱiij t.d. and an ointment of equal parts of the oil and lard, to be well rubbed in for two hours a day. **Gurjun Oil**, i part to **Lime Water** iij parts, taken in the same way, and a liniment of equal parts of the oil and lime water to be rubbed in for two hours daily. **Resorcin Ointment** 20%; **Ichthyol Ointment**, 50%; **Pyrogallic** or **Chrysarobin Ointment**, 5%; 10% ointment of **Salicylic Acid** in **Oleic Acid**, well rubbed in, and **Sod. Salicylate**, grs. xv, t.d.

LEUCOMAINES. *F. de Havilland Hall, M.D.*

What are Leucomaines?—This is the name given by Armand Gautier to the alkaloids which the living cell secretes in the normal as in the abnormal state (λεύκωμα, white of egg). Gautier compares the animal cell to the vegetable cell, and he has shown that both may produce alkaloids, and just as the vegetable cell of the cinchonas produces quinine and a series of other alkaloids, so our cells fabricate alkaloids, some toxic, others innocuous. But, as these alkaloids cannot accumulate in our economy without danger, it is necessary that they shall be constantly eliminated by the different emunctories. Gautier has examined the saliva of man, and extracted therefrom certain alkaloids which are toxic to small animals like the sparrow. The saliva is, therefore, one of the channels of excretion of the alkaloids produced by the living cells of the organism, but it is chiefly by the urine that these alkaloids pass out of the economy. Bouchard has obtained seven distinct toxic substances from the urine (*Vide* "Ptomaines").

REFERENCES.—Dujardin-Beaumetz, "Therap. Gaz.," Nov. 15, 1888; Bouchard, "Les Auto-Intoxi. dans les Malad.," Paris, 1887.

LEUCORRHŒA. (See also "Gonorrhœa in Women.")

John W. Taylor, F.R.C.S.

Leucorrhœa is a symptom and not a disease. It often occurs as a symptom of anæmia and debility in young people, and is cured by a **Quinine** and **Iron** tonic (Quininæ Sulph., gr. ½, Liq. Ferri. Perchlor, ♏x), or by the administration of **Arsenic.** (See "Anæmia.") Occasionally an astringent injection may be necessary.

In later life "leucorrhœa" is usually a symptom of laceration or erosion of the cervix, but vaginal discharges included under this name may accompany various diseases, and, accordingly, need very different methods of treatment for cure. Some of these are here enumerated: Subinvolution, chronic endometritis, chronic vaginitis, mucous polypus, myoma, epithelioma.

LEUKOPLAKIA BUCCALIS. *P. Watson Williams, M.B.*

Unna thinks with Schwimmer that numerous examples occur in which, apart from any previous constitutional syphilis, white patches form on the mucous membrane of the lips, cheek, and tongue, which feel hard, are painless, and are either on a level with the surface, or may project above it. Syphilis, however, whether cured or still persisting, most markedly increases the tendency to the production of such patches; and smoking has the greatest effect, in persons so predisposed, in developing them, which accounts for the rarity of the affection in women. A question of practicable value is the curability of leukoplakia by anti-syphiltic remedies. Even where syphilis has preceded, this cannot be regarded as a true specific ailment. Syphilis predisposes the mucous membrane of the mouth, as it does other tissues, to certain new disorders, which, however, always require a fresh etiological impetus to call them forth. From his personal experience, Unna recommends the following treatment: He regards the concentrated solution of chromic acid in water as the best caustic. When energetic treatment is desired, superficial cauterization with paquelin is recommended, with subsequent application to the peeling surfaces of a weak solution of **Chromic Acid** or of **Nitrate of Silver.** He does not believe in the direct transformation of leukoplakia into cancer, but only in relationship of such a kind, that the cracks in the mucous membrane, constantly irritated by the movements of the tongue, by the secretions of the mouth, and by food, and in themselves painful, serve as starting points for cancer. He considers the due care of leukoplakia as essential to the prophylaxis of cancer of the tongue.

Rosenberg in nine cases obtained a permanent cure in eight, and amelioration in the remaining one, from the local application of pure **Balsam of Peru.** (See "Tongue, Fissures of the.")

These paintings and frictions should be made from one to three times a day by the patient himself. After each application the balsam should be retained in the mouth at least from three to five minutes. The applications always provoke a slight burning sensation and a profuse salivation. It is necessary, however, that the patient resist for several minutes the desire to eject the saliva. Two other indispensable conditions to success are the employment of a medicament of good quality (the balsam of Peru being often adulterated), and sufficient perseverance in the treatment to suit the exigencies of each case. The pains often disappear within a few days; a cure is sometimes effected within a few weeks. In other cases the treatment must be much more prolonged. The author, himself the subject of the disease, was obliged to make use of the application for fifteen months (once a day) in order to definitely cure two spots of leukoplakia, one of which was situated upon the tongue, the other on the mucous membrane of the buccal cavity inside the cheek.

REFERENCES.—Jamieson, "Edin. Med. Jour.," Dec., 1889, p. 569; "Jour. of Cut. and Genito-Urin. Dis.," vol. vii., No. 78.

LICHEN.

Synopsis.—(Vol. 1889, p. 343.) *Lichen Pilaris.*—**Alkaline Baths,** with friction, followed by liniment of **Soft Soap** and **Spirits of Wine** with **Oil of Cade,** ʒj to ʒj, rubbed in with a piece of flannel. If redness is marked use oil instead of the liniment; internally give **Ol. Morrh.** and **Iron.** *Lichen Ruber.*—**Arsenic** in chronic cases, and if it fails, **Bichloride of Mercury. Diuretics** followed by **Mineral Acids** and **Nux Vomica, Arsenious Acid Pills,** $\frac{1}{60}$ gr. at first, thrice daily after meals. Hypodermic injection of Fowler's solution ♏ iv to distilled water ♏ xx, daily for 3 or 4 weeks. Ointment of **Corrosive Sublimate;** R Ung. Zinc Ox. 500·0, Acid Carbol. Ol. Olivæ āā 20·0, Cret. Prep. 10·0, Hyd. Perchlor, 0·5, M. To be well rubbed in. **Baths of Potassium Sulphide,** followed by **Vaseline** inunction; **Liq. Carb n. Deterg** ♏ x or ʒ; to ʒj; **Water** or **Calamine Lotion,** dabbed on, or **Thymol** or **Naphthol,** grs. x to ʒij to ʒj, **Lard** or **Vaseline.** *Lichen Scrofulosis.*—**Ol. Morrh.** internally and externally, keeping the skin soaked.

LITHOTOMY. (See "Bladder.")

LIVER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

In an elaborate paper Dr. Davies Thomas strongly advocates the treatment of hydatid disease of the liver by abdominal section, which gives 90 per cent. of recoveries. He says that tapping operations fail to cure in 40 per cent. and give a mortality of 18 per cent. Parasiticide injections he speaks of as being equally unsatisfactory.

Dr. Carl Lochker, having diagnosed a subphrenic echinococcus,

which had produced symptoms for nine years and which showed signs of suppuration, successfully treated it by laparotomy, the incision being made on the left of the xiphoid cartilage, through the rectus muscle. The patient made an uninterrupted recovery.

At the last meeting of the Italian Society of Surgeons, Dr. Babacci (Macerat), read a paper on elastic suture of the liver. He remarked that to obtain a complete checking of bleeding, after an incision has been made into the liver, it is necessary to suture this organ, in such a way as to establish perfect adhesion of the affected surfaces. For this purpose elastic sutures are best. Not one single animal on which he tried this method of suture had suffered from peritonitis or other infectious disease. These sutures with the elastic thread, allow a certain increase in size of the organ, without tearing the tissues. The extremities of the elastic thread are connected with the sutures by a silk ligature.

REFERENCES.—Davies Thomas, "Australian Med. Jour.," June 1889: Lochker, "Annals of Surgery," vol. ii, p. 130, 1889; Babacci, "Med. and Surg. Rep.," June 1, 1889; Morris, "Lancet," March 16, 1889: Chauvel, "La Progrès Méd.," May, 1889; Hatch, "Lancet," Jan. 5. 1889, vol. i, p. 13; Vaughan Harley, "Brit. Med. Jour," Nov. 23, 1889: Knowsley Thornton, "Brit. Med. Jour.," vol. 1, 1889, p. 4; For other references to the surgery of the Liver, see "The Annual" for 1889.

Synopsis.—(Vol. 1889, p. 345.) **Ammonium Chloride** grs. xx, t.d. in congestion; **Mercury**, grs. ij, with **Dover's Powder**, grs. iij, every 2 or 3 hours for diarrhœa, but if skin is hot and dry and temperature high, use small repeated doses of **Liq. Ammon. Acet.** until skin is moist. Fomentations and hot bran bags locally. **Olive Oil** in hepatic colic. Enemata of cold water useful in catarrhal jaundice.

LOCOMOTOR ATAXY.

J. Michell Clarke, M.A., M.B.

Suspension Treatment in.—The treatment of locomotor ataxy (Tabes Dorsalis) by suspension was first brought to the notice of the medical profession by a lecture of Prof. Charcot's in January, 1889, in which he gave the results of his observations during the end of 1888.

The credit of discovery belongs to Dr. Motchoukowski, of Odessa, who published a paper on the subject in 1883; this paper had apparently escaped notice until Prof. Charcot was led to carry out the treatment by the report of its efficacy received by him from Prof. Raymond, of Paris, then in Russia. Motchoukowski made the discovery of the value of suspension by chance, his attention being drawn to it by observing the improvement which followed in a tabetic patient after suspension in Sayre's apparatus for the purpose of applying a plaster jacket.

The apparatus employed by M. Charcot was modelled on that devised by Sayre for suspending patients for the application of plaster jackets for lateral curvature. The tripod, however, which is commonly used in Sayre's method, is not suitable for the purpose of suspending ataxics, it is not strong enough for very heavy patients, and secondly, on account of the difficulty they have in maintaining their equilibrium, they are apt to clutch convulsively at one of the legs of the tripods, and so bring the whole apparatus down; an accident likely to result in injury both to operator and patient. The suspensory apparatus should hang then from a strong hook firmly fixed in the ceiling. To this hook are attached the pulleys, and to the pulleys a spring balance or dynamometer. The advantage of using the latter consists in increased steadiness during the raising and lowering of the patient, and in exact knowledge of the weight brought to bear. From this balance hangs a cross bar, suspended by a ring at its centre, and terminating at each end in a hook, which carries a ring to which the axillary supports are attached. The upper surface of the cross bar is notched at intervals, these notches receiving the moveable rings which run over it and carry the straps to which are attached the bands supporting the head. These bands consist of two strong and broad straps of padded leather, the one passes under the chin and the other under the occiput, and they are cut into the shape required in order to fit closely and lie flat. They are elongated oval then in shape, are suspended from the cross bar by straps which hang from the rings on it as above mentioned, and are kept in position under the patient's chin and occiput by narrow straps which are sewn to the occipital band and pass forwards on each side of the neck to be fastened by buckles attached to the chin support. These connecting straps require careful adjustment so that they may hold the head supports firmly in position and yet not press on the cervical vessels, and they are perforated with holes in order to allow of accurate adaptation to necks of different size. In the same way the straps that carry the axillary supports, which are broad, well-padded bands of leather, can be lengthened or shortened according to the requirements of each case. In some patients the chin and occipital supports require extra padding to make them fit accurately and thus avoid painful strain on particular muscles; the notches on the bar into which the rings carrying the straps which support the head-bands are to be inserted vary with the size of the patient's head. The head-supports having been carefully adjusted, the patient, with his coat off, gets the pads of the axillary bands well into the axillæ; the straps are now carefully adjusted so that the proper amount of pressure is borne by arms and head respectively. The axillary supports, in fact, regulate

the weight borne by the head ; they must not be so short that they bear nearly the whole weight, for then the beneficial effects of suspension by extension of the spinal column will not be attained, and further, the pressure on the brachial plexus will become so painful as to necessitate speedy termination of the suspension ; nor on the other hand should they be so long as to throw an undue proportion of the weight upon the head and neck, for to some patients this is insupportable.

Everything then being properly arranged, steady uniform traction is made on the ropes until the patient is raised from the ground, the increasing amount of extension made being indicated by the index of the dynamometer. The operator here takes the exact time at which the suspension began, and by lightly holding the patient, steadies him and prevents movements of oscillation. During suspension the patient slowly raises his arms from his side and slowly lowers them again, about once in every fifteen seconds, in order to throw more of the weight upon the head and neck. The suspensions should not be carried out more than once every other day ; if repeated more frequently they are likely to lead to injurious results. On the first occasion half a minute or less is quite long enough for the suspension to last ; the time is then increased by half a minute at each visit until a period of three to four minutes is reached. The patient is then slowly and steadily lowered. Some modifications of the above method require to be noticed. After a few times, if the patient is light—under or about eleven stone—the use of the axillary supports may be dispensed with and suspension made from the head and neck only ; in this way more complete extension of the spinal column is secured, but heavy people do not, as a rule, bear it well. Dr. Morton, of New York, has advocated a plan by which the patient, after the head supports have been properly adjusted, raises and keeps himself suspended by pulling on a handle affixed to the ropes ; this entails considerable muscular exertion.

Dr. Hammond uses an apparatus by which traction is made on the chin and occiput only, the bands supporting these being attached to the extremity of the cross beam of a balance, in order that the exact weight in action may be known. At first he utilizes a weight of seventy-five to one hundred pounds only, gradually increasing each day until the patient's feet are raised from the ground.

The modification introduced by Weir Mitchell, consists in the substitution for the axillary bands of a sort of sling which fits and supports the patient's flexed elbows. Further, a double set of ropes is used, one for raising the patient by means of the slings which support his elbows pressed against his sides, the other set for exerting traction

upon the head and neck. In this way the amount of extension of the spinal column can be conveniently graduated and altered whilst the suspension is proceeding, according to the requirements in any particular case, by merely changing the relative length of the cords which are connected with the head and arm supports respectively. In my own practice I have used both the apparatus modelled on the one originally used by Charcot, and also the very convenient modification of it introduced by Dr. H. de Watteville. If a number of patients have to be treated, the latter has many advantages ; in it the head and axillary supports are attached to cords which run through blocks in such a way that the cords can easily be altered to any desired length by simply pulling on them before the patient is raised, while when any weight falls on the cords they are at once caught and held firmly in the blocks ; by this means a great saving of time and labour is effected over the more clumsy straps and buckles.

Two important points may be here mentioned : first, that in all cases suspension should be carried out under the personal supervision of a medical man ; the occurrence of fatal accidents shows the necessity for this. Secondly, the patient must keep still and not attempt to help himself in any way throughout the whole course of the suspension.

For the first two or three times it is well to let the patient keep his toes just in contact with the ground until he becomes more accustomed to the treatment. Some patients are especially nervous, and all undergo suspension with less apprehension if they are first of all assured that, on making a preconcerted sign to indicate that they can bear the strain no longer, they shall be lowered at once. In heavy persons—over twelve stone—the period for which they are suspended should be shorter than in the case of light weights, and the former require, as a rule, the use of the axillary supports. In all cases in which the arms are affected, say with inco-ordination, anæsthesia or lightning pains, I think the best results are to be expected from suspension by the head and neck only, unless this is contra-indicated on other grounds.

The unpleasant symptoms most generally complained of as resulting from suspension, are pains in the back of the head and neck from the pressure of the occipital band, and pains in the lumbar spine ; the former may be obviated by taking care that the occipital band lies flat and even, and by an additional pad if necessary ; the latter by careful adjustment of the relative lengths of the axillary and head supports, by avoiding all jerks in raising and lowering the patient, and by not keeping him too long suspended. To avoid the giddiness so often felt towards the end of the suspension or immediately after it, it is also im-

portant to raise and lower slowly and evenly, and especially not to let the patient down quickly ; rotatory movements must be stopped ; care taken that the straps which connect the occipital and chin supports do not compress the cervical vessels ; and the patient must neither hold his breath nor close his eyes. Burning pains and other signs of excessive pressure on the brachial plexus and axillary vessels may be obviated by careful adjustment and thick padding of the axillary pads. A tendency to syncope occurs in some people, and may be often relieved by causing the patient to take several deep inspirations ; if he is not thus relieved, the suspension should at once be brought to a close.

The contra-indications to suspension, according to Dr. Raoult, are :—

(1,) Great debility. Weir Michell's apparatus (*vide supra*), is well adapted for cases of anæmia, obesity, or œdema.

(2,) Emphysema—except in moderate amount—pulmonary phthisis, pronounced atheroma of arteries, diseases of the heart, and probably nervous diseases attended with much muscular spasm and rigidity.

(3,) Carious and defective teeth. This difficulty may be overcome by placing a thick piece of india-rubber between the patient's gums.

A fatal result has occurred from suspension in five cases. In four death took place from strangulation, in the absence of anyone who could render effective aid ; in none of these cases was there a medical man present, and there is no reason to think that either of the accidents would have occurred if ordinary precautions had been taken. Of minor accidents the occurrence of œdema, syncope, vertigo, and passing paralysis of arm muscles, has been noted. By care and attention to the above mentioned rules in carrying out the treatment, and by the rejection of unsuitable cases accidents may easily be avoided.

The good effects claimed for suspension by Prof. Charcot are that it relieves the motor troubles and the pains of tabes. It is necessary to be aware that in most cases no improvement is manifest until after eight to ten suspensions, sometimes not until twenty ; in a few improvement in walking and inco-ordination, and in still fewer relief from pain may occur even after two or three times, but as a rule, no decided improvement takes place until from twelve to twenty suspensions have been carried out. According to Prof. Charcot, the earliest sign of amelioration is in standing, walking, and inco-ordination of legs. At first it is often noticed that patients walk better for an hour or two after each suspension, but that this passes off before the next occasion. After a certain number of suspensions the improve-

ment in walking, standing, etc., becomes permanent, the patients walk further and without support, often ceasing to watch the ground whilst walking. Next, the swaying or actual alling of the patient when he stands with feet together and eyes closed, becomes less marked or disappears. Later on, occasionally at an earlier stage, come improvement in lightning pains, in troubles of micturition, and loss of sexual power, in gastric and laryngeal crises, and in bladder and rectal pains. On the other hand, no alterations in the absence of knee-jerk, in defects of vision (optic atrophy) . in the Argyll-Robertson phenomenon, nor in oculo-motor paralyses, have been noticed.*

All patients do not receive benefit to the same degree, in fact, they show much variation in the way in which certain symptoms are relieved in some and not in others. It is believed that old standing cases get greater good from suspension than more recent ones do.

My own experience of the treatment in fourteen cases† corresponds very closely with the results hitherto published. Twelve of these fourteen cases were instances of tabes dorsalis, one was a case of chronic spinal disease, most probably tabes in an irregular form, and one a case of Friedreich's disease or hereditary ataxy. In the last patient and in two others in whom there was advanced optic atrophy with but slight damage to the cord, there was no improvement ; in another case there was steady amelioration for five weeks, but the patient then had a severe gastric crisis, which left her in much the same condition as at first. In the other cases the first sign of improvement showed itself in increased steadiness in standing and walking, in greater muscular power, in lessened giddiness and increased confidence *e.g.*, on crossing a crowded street. Next came marked diminution of ataxy in the legs, also in arms when these were affected, with more steadiness in walking and standing with the eyes closed. As to the symptom of giddiness in the dark, I found much variation, some patients were relieved but others not, though improved in the other respects mentioned. Several ceased to watch their feet in walking, and walked well for short distances without the aid of a stick. Sensation, including muscular sense, previously lost in the legs, was speedily regained, but in the arms improvement was slow or absent. Lightning pains, present in nine cases, were relieved in all but three, but not till after some time, showing generally no change until fifteen to twenty suspensions had been carried out. It is difficult to speak exactly as to the occurrence of gastric and laryngeal crises ; in two patients they

* One single case of improvement in this last respect has been reported by Dr. Moutard-Martin. (See "Prog. Medical," June 22, 1883.)

† "Practitioner," November, 1889.

came at longer intervals. Sexual power as a rule improved; urinary troubles were relieved in one patient, in three others remained unaltered. Sleep, appetite, and general well-being increased; three patients gained in weight; constipation was less troublesome. No alteration took place in loss of knee-jerk, in Argyll-Robertson phenomenon, in paralyses of oculo-motor muscles, nor in vision. Those of the patients who had been longest under treatment showed most amelioration. Prof. Charcot has carried out suspension in a hundred and fourteen cases, three of them women; sixty-four he rejects because they did not continue the treatment a sufficient time. Of the remaining fifty cases, thirty-eight showed very great improvement; in seven there was no change after from fifteen to twenty suspensions or more, and in five suspensions had to be discontinued for different reasons. It is sufficient to state that many observers in England, America, France, and Germany, have published accounts of cases of tabes dorsalis treated by suspension, giving a large percentage of favourable results.*

Other Nervous Diseases treated by Suspension.—Patients treated by M. Charcot; four cases of Friedreich's disease, some benefit in one only; eight cases of spastic paraplegia, rigidity somewhat less after treatment; three cases of paralysis agitans, improvement in sleep, rigidity, pain, and subjective heat-sensation. Dr. Dana noted improvement in the case of paralysis agitans, Friedreich's disease, transverse myelitis, and hemiplegia of cerebral origin. Amelioration was obtained by other observers in one patient suffering from "antero-lateral sclerosis," in two cases of functional impotence, and in a case of meningo-myelitis. In a case of disseminated sclerosis, paraplegia came on after suspension had been practised for three days.

During actual suspension the heart's impulse increases in force, the pulse is somewhat quickened, and intra-arterial tension rises, while the respiratory movements become more frequent and diminish in depth. As to the mode of action by which the beneficial effects of suspension are produced, we have no certain knowledge. Charcot compares the effect on the spinal cord to the elongation of the nerve-fibres in nerve stretching operations, and suggests that this is combined with modifications in the circulation. An obvious explanation would be the loosening or breaking down of newly formed connective-tissue, arising from chronic meningitis around the entrance of the posterior nerve roots into the spinal cord, and the restoration of permeability to nervous impulse by this means, in damaged or compressed, but not

* The most important exception to this statement is the record of sixteen cases treated at the Queen Square Hospital and published in the "Lancet," October 19, 1889, of whom only three are stated to have distinctly improved.

wholly destroyed, nerve-tubes, with concomitant improvement in their nutrition. Dr. Althaus makes this suggestion, and thinks that suspension may also loosen the overgrown and unduly hardened neuroglia in the diseased areas, thus still further relieving pressure on nerve fibres, and that it also has a stimulating effect on the important centres in the medulla oblongata.

The length of time during which suspension should be carried out in order to obtain the maximum of benefit, cannot, as yet, be exactly stated. One of my patients left off attending after fifteen suspensions because the lightning pains, his chief trouble, were much relieved; he came back, however, two months later, as bad as ever. Another man, after being under treatment five months, at the end of three weeks' intermission considered himself to have gone back, though still very much better than he was before the suspensions had been carried out. At present then we must persevere steadily until we have more definite knowledge of the necessary period of treatment.

As to selection of cases, there has not been sufficient experience of the method to enable us to say more than that so far cases of long-standing and chronic course have received most benefit. At any rate, we have in suspension a mode of treatment which is capable of affording in some cases great relief to many of the distressing symptoms of tabes dorsalis—more especially inco-ordination and its consequences and disorders of sensation—and which, with due caution, can be easily and safely carried out.

REFERENCES.—Charcot, "Le Prog. Méd.," Jan. 19, 1889; Gilles de la Tourette, "Ibid.," Feb. 23, 1889; de Watteville, "On the treatment by suspension of Locomotor Ataxy," March, 1889, and "Lancet," March 16, 1889; Raoult, "Le Prog. Méd.," June 22, 1889; Althaus, "Lancet," March 30, 1889; Saundby, "Ibid.," 1889; Gosecki, "Le Practicien," 1889; "Berl. Klin. Woch," No. 8, 1889; Blocq., "Bull. Méd.," June 9, 1889; Abadie, "Le Prog. Méd.," April 27, 1889; Morton, "New York Med. Record," April 13, 1889; Dana, "Ibid.," 1889; Hammond, "New York Med. Jour.," May 12, 1889; E. de Rangi, "Rivis. Clin. Therap.," March, 1889, quoted in "Prog. Med.," June 22, 1889; Darier, "Rev. d'Ophthal.," Lunn, "Brit. Med. Jour.," Oct. 5, 1889, see also "Lancet," June, 1889; "New York Med. Jour.," May 1889; "Brit. Med. Jour.," June 1, 1889; and "Rev. d'Hygène Thérap.," May, 1889; Michell Clarke, "Practitioner," Nov., 1889; Eulenberg and Mendel, "Neurol. Centralblatt," June 1, 1889; Mouisset, "Lyon Médical," Aug. 11, 1889; Churton, "Brit. Med. Jour.," Oct. 26; Althaus, "Ibid.," Oct. 19; Garry, "Ibid.," Nov. 9; and "Lancet," Oct. 19, 1889.

LOCOMOTOR ATAXY. *Charles L. Dana, M.D., New York.*

Treatment by Suspension.—The writer desires to add his testimony as to the occasional great value of suspension in tabes. Up to date of writing he has employed it in twenty-two cases of this disease with very marked improvement in four cases, much improvement in six, slight improvement in six. In the remainder no improvement was noticed, or treatment was discontinued.

In cases in which there was slight improvement the agency of the suspensions was doubtful. In one case it seemed to do harm, precipitating the course of the disease; but this might be questioned as the patient was steadily getting worse when treatment began.

Synopsis.—(Vol. 1888.) **Acetanilide** (p. 2). **Antipyrin** (p. 14).

LUMBAGO.

Synopsis.—(Vol. 1888, p. 76.) **Chloride of Methyl** as spray.

LUNGS. (See "Abscess of," "Bronchitis," "Phthisis," &c.)

LUPUS EXEDENS. *Walter Pye, F.R.C.S.*

Mr. Taylor, of Handsworth, has found the **Ethylate of Sodium** to be very efficacious in the treatment of lupus exedens of the face. Nitric acid was first applied in the case reported, but it seemed rather to stimulate than to eradicate the deposit. Then once a day the ethylate of sodium was applied with a small glass tube for three days. The resultant scabs were either removed or fell off in a few days, leaving a healthy surface behind. Other patches were then similarly treated.

The advantages claimed by Mr. Taylor are that no anæsthetic is required, no after dressing, and hardly any pain throughout. The part must be kept quite dry while the ethylate is applied.

LUPUS VULGARIS. *W. Allan Jamieson, M.D.*

The treatment recommended by Unna, of salicylic and creasote plaster muslins, continues one of the most successful methods, but in some cases, particularly when the patches are limited, **Lactic Acid** gives good results. The patch is washed, dried, and the skin round it protected by smearing with **Lanolin.** A small piece of absorbent cotton wool, made moist with pure lactic acid is now placed on the patch and pressed on. It is allowed to remain from ten to fifteen minutes, and is then removed, and the part bathed, dried, and dressed with a piece of Unna's **Zinc Ichthyol** salve muslin till next day. The application of the acid is repeated daily till the part seems pitted out, or a grey slough forms; then further use of the acid is discontinued, and the part dressed with the salve muslin till cicatrized.

Mr. Taylor ("Brit. Med. Jour.") recommends **Ethylate of Sodium.** The patches are touched by means of a glass rod, and the scab which

forms is left till it separates. No water must be allowed to touch the part while the solution is being applied, nor for some time after.

One great difficulty in the treatment of lupus is the final destruction of residual nodules or minute recurrences.

Unna advises ("Monat. Prak. Derm.") the following lotion :—

℞ Corrosive Sublimate	1	Alcohol	20
Carbolic Acid or Creasote	4		

The nodules are attacked in series of tens, beginning with those at the edge of the patch. They are first punctured with an acne lance, and a minute shred of absorbent cotton moistened with the lotion is inserted by means of a sharpened stick ; the cotton rotated and allowed to remain for ten or fifteen minutes. In a few days the punctures and lupus deposits so treated have almost disappeared, and other nodules may be then similarly attacked. This method, the writer believes, has many advantages over the somewhat similar plan of treatment by means of the nitrate of silver stick.

Synopsis.—(Vol. 1889, p. 351.) **Lupus Vulgaris.** *Internally* : **Ol. Morrh. Strychnia, Iron ; Tinct. Iodi.** ♏v t.d. *Locally* : Scraping with Volkman's Spoon, linear scarification, Cauterisation, by Galvanic or Paquelin's Cautery. Unna's plaster muslins, composed of **Salicylic Acid** and **Creasote. Bichloride of Mercury,** grs. ij to ℥j. **Pyrogallic Acid** saturated solution in **Æther** or 10% ointment. **Electrolysis ;** Screw instruments and dentist's burrs have been used to break up nodules. Painting on of 10% sol. **Pot. Permanganas** daily until a black crust forms, and nodules are softened. Paste of equal parts **Salicylic Acid** and pure **Beech Tar Creasote** applied twice daily even after nodules have disappeared.

Lupus Erythematosus.—Internally : **Arsenic** or **Iodide of Starch.** *Locally* : **Tarry Ointments, Oleate of Mercury,** Painting with pure liquid **Carbolic Acid** at intervals of a week, and using Lotion of **Potass Sulphurata,** ℞ Pot. Sulphurat. ℥j. Zinci Sulph. ℥j, Glycerini ℥j, Aq. ad ℥vj, M. Ft. Lot. In severe cases **Salicylic** and **Creasote** plaster muslin followed by **Zinc Ichthyol Jelly.** Non flexible Collodion. When there is little hyperæmia, ℞ Zinc. Sulph., Pot. Sulphurat. āā. grs. xxx., Alcohol ℥iij ; Aq. Rosæ ℥iv. The Zinc and Potash dissolved separately and then mixed.

LYMPHATIC GLANDS (Inflamed). *Walter Pye, F.R.C.S.*

Very Hot Compresses are employed by Prof. Nasiloff in the treatment of inflamed lymphatic glands, and are said by him to be very successful. They are made of fourfold linen, a little larger than the inflamed area. They are dipped in boiling water, wrung out and applied, the temperature of the compress being then 140° to 165°. The compresses are covered with cotton wool and retained for fifteen minutes. This application is repeated night and morning for about a fortnight. The pain is somewhat severe, and blisters are apt to form. Absorption is greatly promoted.

MALARIA.

Synopsis.—(Vol. 1889, p. 58.) Parthenium Hysterophorus, grs. xv. daily in malarial fever.

MALIGNANT PUSTULE.

Synopsis.—(Vol. 1888, p. 368.) Local application of a paste of Quinine and Spirits of Turpentine.

(Vol. 1889, p. 354.) Sod. Sulphite; Quinine in large doses with early and wide excision of the pustule, or the injection of Iodine or Carbolic Acid 5% into the eschar.

MAXILLARY SINUS (Empyema of). *Greville MacDonald, M.D.*

Excluding in this place those cases that come chiefly under the observation of the dentist, the symptoms of which are sufficiently obvious and amply detailed in every text-book of surgery, it is yet necessary to draw attention to such cases as consult the surgeon for relief, the diagnosis of which is sometimes a matter of some difficulty. The patient complains of various nasal troubles, such as obstruction, a purulent, often fœtid, discharge, confined usually to one side; headache or neuralgia, sometimes in the brow of the affected side, in the teeth or the ear, sometimes subject to regular morning exacerbations; a feeling of weight on the side affected; and, lastly, of general *malaise*. There is frequently tenderness on percussing the malar or nasal bones, radiating to the alveolar border or ear. If, with such symptoms, we perceive lying under the middle turbinal an opaque yellow discharge, our diagnosis is made; but, where the discharge is obviously flowing from above that structure, we may be in some difficulty, since from anatomical considerations one would rather presume the ethmoidal cells to be affected, though subsequent exploration shows the antrum to be diseased. When in doubt it may be convenient to perforate the outer wall of the nose, between the middle and inferior turbinals, with a strong, curved, needle-pointed cannula, having an exhausting syringe attached. But in two cases we have known this fail in discovering pus, when subsequent opening from a tooth socket proved the diagnosis correct. Frequently the affection is associated with polypus of the middle turbinal, and sometimes with caries of that bone. In such cases little benefit from treatment will accrue until the antrum of Highmore is evacuated. For this purpose we consider Hunter's method in every way preferable, although most rhinologists advocate opening from the nose. But the possibility of not reaching pus, the difficulty in keeping the sinus open, and the impossibility of efficient drainage, render the removal of a molar or bicuspid the most surgical proceeding. Bayer recommends enlarging the natural orifice with the galvano-cautery, a proceeding unnecessarily severe, and hardly likely to fulfil the requirements of the case.

Dr. Moritz-Schmidt, for diagnosis, uses a Pravaz syringe, with which he perforates the maxilla from the inferior meatus. It may occasionally be of service to remember that the cavity is sometimes divided, as pointed out by Giraldès, by septa of bone projecting from its walls. Efficient drainage with an Ellis's spiral tube, and daily washing with some antiseptic, will generally effect a cure within a few weeks. But many cases will not respond until the nose-trouble originating the empyema has been rectified.

REFERENCES.—MacDonald, "Brit. Med. Jour.," Sept., 1889; Bayer, "Rev. Mens. de Laryng.," Jan., 1889; Moritz-Schmidt, "Berl. Klin. Woch.," No. 80, 1888; Giraldès, "Des Maladies du Sinus Maxillaire," 1851.

MEASLES. *Henry Dwight Chapin, M.D., New York.*

Drs. J. D. Smith and W. C. Dabney ("Arch. Ped.," Aug., 1889), advise **Linseed Oil** and **Antifebrin** in measles. It was found that the cough and sore throat were greatly relieved by the frequent use of small quantities of a mixture of linseed oil and glycerine,—1 part of the former to 3 of the latter.

Of far greater interest was the effect of antifebrin in these cases: it was always given as soon as the temperature reached a point above 103°, and in some cases it was administered when the fever was much less, in order to produce sleep or allay restlessness.

The primary effect was of course to reduce the temperature, but it had other effects of scarcely less value; it was found to quiet restlessness and promote sleep better than any other remedy which could be employed, and, although the drug was used very freely (more than 2 ounces were used during the epidemic), in no instance was there a single unfavourable symptom.

The itching was entirely relieved for the time being by its use, and there was produced a feeling of great comfort in all respects. The effect upon the kidneys, too, is not without interest; in every case it first caused a reduction of temperature with more or less sweating, followed usually by sleep, and then, after three or four hours, the patient would pass a large quantity of limpid urine. The suppression of urine in the case of scarlet fever was apparently relieved by the antifebrin. It is worthy of mention, also, that in the two cases in which retention of urine occurred antifebrin had *not* been employed.

The dose usually given was from 2½ to 3½ grains, according to the age and weight of the patient, and it was dissolved in brandy to which a little water was then added.

It was never found necessary to repeat the dose under six hours, and in many cases 1 dose a day was sufficient; and if this dose was given at bedtime it nearly always caused a quiet night's sleep.

MENINGITIS. (See "Tubercular Meningitis.")

Synopsis.—(Vol. 1888, p. 369.) **Iodoform** inunction 10% in j to iv parts **Vaseline**; **Tartrate of Thallin** gr. $\frac{1}{10}$ hourly to lower temperature. **Morphine** subcutaneously with ice cold applications to the head. **Ergot, Gelsemium, Menthol, Camphor,** and **Hoffman's Anodyne** have been used externally.

(Vol. 1889, p. 355.) Inunctions of **Iodoform** and **Lanolin** j to v in tubercular forms. **Iodide of Potassium** and **Ergot** have been used in traumatic cases.

MENORRHAGIA AND METRORRHAGIA. *John W. Taylor, F.R.C.S.*

The *causes* of these are numerous and varied. An accurate diagnosis is accordingly of the greatest importance; successful treatment in any given case depending upon this. *Heart Disease, Kidney Disease, Incomplete Abortion, Subinvolution, Chronic Metritis, Polypus, Myoma, Cancer, Ovarian Hyperæmia, Tubal Distension,* and any small *Pelvic Tumour* which keeps up irritation and hyperæmia may be direct causes of uterine hæmorrhage.

Physical Over-work is a fruitful cause among general servants and nurses, especially where there is much running up and down stairs.

Drugs may sometimes bring on metrorrhagia, mercury being specially liable to produce this symptom.

Dress is occasionally a cause. Tight lacing may produce and keep up profuse and serious menorrhagia.

Sewer Gas and *defective sanitation* have also been claimed as etiological factors.

The most frequent cause of severe metrorrhagia is incomplete abortion. For its diagnosis, enquire for precedent history of amenorrhœa; for its treatment, see "Abortion."

In the menorrhagia of youth due to ovarian hyperæmia, **Bromide of Potassium** is the almost unfailing remedy. It needs to be given in large doses: one drachm twice or thrice daily being necessary in severe cases. **Digitalis** is needed when the menorrhagia is due to heart disease. **Rest,** when due to overwork.

Strychnia is useful when menorrhagia is associated with general debility and loss of muscular tone, the flow being too free and lasting too long. In such cases it may often be advantageously combined with digitalis and hydrastis.

℞ Liq. Strych.	♏iij	Ext. Hydrast. Can. Liq.	♏xv
Tinc. Digitalis	♏x	Aquam ad	℥j

t.d.s.

Ergot (Liq. Ext., ʒss, t.d.s.), **Hydrastis** (Liq. Ext., ♏ xx, t.d.s.) and **Hamamelis** (Tr. ♏ v. to x, t.d.s.) are useful in hæmorrhage due to chronic metritis and pelvic hyperæmia. Each of these remedies is worthy of confidence. **Ergot** is said to cause contraction of the uterus itself, and is the remedy for subinvolution. **Hydrastis** is said to cause contraction of the pelvic vessels, and is indicated in the hæmorrhage of pelvic inflammation and hyperæmia. **Hamamelis** acts mainly on the venous system; this is therefore indicated when the loss is "passive" and associated with other signs of venous congestion, such as varix and hæmorrhoids.

Cannab. Indic. is recommended by some, but its action is uncertain.

Ergot in combination with **Chlorate of Potash** (as in the following formula) is the usual prescription at the Birmingham and Midland Hospital for Women in cases of subinvolution.

℞	Ext. Ergotæ Liq.	ʒss	Acidi Hydrochlor. Dilut.	♏ x
	Potassæ Chloratis	gr. x	Infusi Gentianæ	ʒj.

This is taken regularly (t.d.s.) for three or four months without change or intermission.

Local treatment is often necessary.

The thick, heavy, and congested state of the uterus may be kept up by retained membrane or a hypertrophied state of the endometrium. This will need removal by the **Curette.** Laceration of the cervix is sometimes the cause of the metritis. This will need **Emmett's Operation** or the use of the **Cautery.** Chronic retroflexion may often appear to be a cause, but is rather an accident or complication.

The **Hot Vaginal Douche** is nearly always a valuable auxiliary to treatment.

Of intra-uterine applications (which need to be used with great judgment), **Ext. Belladonnæ, Carbolic Acid, Iodine,** the **Thermo-cautery,** and the **Positive Pole** *of the continuous current*, after the method of Apostoli, are of the chief importance.

Polypus may often be felt on careful examination if the cervix is moderately open, and of course needs, removal: the mucous polypus with a wire snare, the fibroid with the écraseur.

Myoma needs removal of the appendages, or the treatment by **Electricity.**

The bleeding from cancer of the cervix or cervical erosion may always be restrained by a **Tannin-wool Pad,** furnished with a thread or silk for the purpose of removal after two or three days.

Tubal disease will often need **Abdominal Section** to obtain a cure, but the hæmorrhage due to pelvic inflammation is always benefited by **Rest** and the administration of the **Bromides,** either alone or in combination with **Hydrastis** and **Salix Nigra.**

Recent literature on the treatment of metrorrhagia by drugs tends to establish or confirm the following observations :—

(1,) That the internal administration of astringents is absolutely useless.

(2,) That **Ergot** and **Hydrastis** are the only drugs on which much reliance can be placed. (Dr. Atthill states that the American fluid extract of ergot is the only trustworthy preparation of this drug), and

(3,) That the regular administration of ergot after parturition tends to promote a rapid and healthy involution.

Dr. Lutaud has drawn attention to the fact that suppression of the menses is a frequent result of the morphia habit, and argues from this that morphia is specially indicated in uterine hæmorrhage from cancer and myoma. Respecting the value of morphia in cancer there can be but little difference of opinion. In myoma the remedy recommended is worse than the disease, and while we possess far better means of treatment in removal of the appendages and the treatment by electricity, the use of morphia should undoubtedly be avoided.

An interesting discussion which dealt largely with the subject of menorrhagic chlorosis followed the reading of a paper by Dr. Stephenson at a recent meeting of the Obstetrical Society. Dr. Clapham cited a case in a girl aged eighteen. The hæmorrhage was checked by an intra-uterine application of solution of perchloride of iron. Mr. Alban Doran referred to a fatal case occurring in Dr. Routh's wards at the Samaritan Hospital. The patient was sixteen years of age. If there be a true chlorosis attended with menorrhagia (which many doubt), it is evident that this needs most careful differentiation from that chlorotic or anæmic state which is met with as the result of menorrhagia. The latter is found in most of the cases of "primary" menorrhagia. Both the menorrhagia and the consequent anæmia are usually cured by the administration of **Bromides** as already pointed out. A case of metrorrhagia accompanied with purpura occurring nineteen days after parturition has been reported by M. Stumpf. This recovered after an intra-uterine application of **Perchloride of Iron.**

REFERENCES.—Atthill, "Therap. Gaz.," Jan. 15, 1889. Herman and Fowler, "Obst. Trans.," 1888. Lutaud, "Rev. Gen. de Clin. et Therap.," May 2, 1889, and "Therap. Gaz.," June, 1889. Clapham, Doran, Routh, Playfair, "Obst. Soc.," March 6, 1889. Stumpf, "Arch. für. Gyn." 24-1.

METATARSALGIA. (See "Anterior Metatarsalgia.")

MIGRAINE. (See "Headache.")

MILK DEFICIENCY OF.

Synopsis.—(Vol. 1888.) Carica Papaya (p. 32), Urtica Urens (p. 105).

MOLLUSCUM CONTAGIOSUM.

Synopsis.—(Vol. 1889, p. 358.) *Tonics*: Ol. Morrh.; Touching the spot with pure Carbolic Acid and then applying flexible Collodion. Incising the tumours and squeezing out the contents.

MOLLUSCUM FIBROSUM (Fibroma).

Synopsis.—(Vol. 1889, p. 358.) Removal by knife, ligature or cautery.

MORHŒA (Circumscribed Scleroderma).

Synopsis.—(Vol. 1889, p. 358.) Turkish Baths; Friction; Massage; inunction of Lanolin and Galvanization in neighbourhood of but not over the patch. ℞ Sapo Viridis ʒss; Ung. Hydrarg ʒj, M. All treatment is unsatisfactory.

MUCOCELE IN INFANTS. *W. Lang, F.R.C.S.*

Weiss employs in these cases conical probes of the size of 3 or 4 Bowman, which he passes through the dilated punctum; he does not slit the canaliculus. Previous to resorting to probes he tries the effect of astringent lotions, together with scrupulous cleanliness both of the conjunctiva and nasal mucous membrane.

MULTIPLE NEURITIS. *Charles L. Dana, M.D., New York.*

Much has been written about the pathology and clinical history of this disease, but there have been no special contributions to its therapy. Under the head of prophylaxis, however, one should bear in mind the fact that sometimes there are premonitory symptoms, and these, according to Dr. James Ross, are: (1,) Disorders of the tactile sensibility of the extremities, which patients usually describe as numbness of the fingers and toes; (2,) Vaso-motor spasm of the extremities, named by Raynaud "local asphyxia," and which the patients refer to as "deadness" and "coldness" of the fingers and toes; (3,) Severe cramps, which are most frequent and severe in the muscles of the calf, although these muscles are by no means the exclusive seat of them.

Dr. J. F. Goodhart reports a case of alcoholic neuritis, in which improvement set in rapidly after hypodermic injections of strychnia were given twice daily.

Professor Nannyn also highly praises the use of hypodermic injections of strychnia in paralyses, instancing diphtheritic paralysis. He begins with $\frac{1}{40}$ gr. and increases the dose to $\frac{1}{6}$ gr.

References.—"Lancet," June 8, 1889; "Brit. Med. Jour.," Jan. 19, 1889; "Med. Chirurj. Rund.," 1889, p. 126.

MYALGIA.

Synopsis.—(Vol. 1888.) Aletris (p. 10); Ammonia Hydrochlor. (p. 11); Antipyrin (p. 14); Apon (p. 17).

(Vol. 1889, p. 64.) Saffrol, ♏ xx, and increased.

MYCOSIS FUNGOIDES (Lymphodermia Perniciosa).
Synopsis.—(Vol. 1889, p. 359.) Pyrogallic Acid Ointment.

MYOPIA. *W. Lang, F.R.C.S.*

Motais finds that one of the parents in 65 per cent. of his three hundred and thirty cases of myopia was also myopic. Therefore myopia is very hereditary. It appears early, rapidly develops, is usually of a high degree, and is more likely to have grave complications than acquired myopia. The father usually transmits his defect to the daughter, and the mother to the sons. The principal conditions which favour the hereditary transmission of myopia are: (1,) The application of the eyes under bad hygienic conditions both in school and at home; (2,) Astigmatism and a low roof to the orbital cavity.

Boucheron considers that myopia is produced in young children, especially those whose parents are also myopic, by a cramp of the ciliary muscle, analagous to writer's cramp. He draws attention to the fact, so commonly observed, of the child straining every muscle, when he begins to write. How he bends his head in a forced manner, puts out his tongue and contorts his face in the manner characteristic of paying attention; he also holds his pen in a cramped manner, stiffens and twists his body, and presses his feet firmly. This general cramp of the muscles is accompanied by a similar cramp of the muscles of accommodation, which in young myopes may become permanent. Therefore it is essential that all children, and especially young myopes, should read and write at a distance and hold themselves erect. Writing with slate pencils on grey slates should not be permitted; either ink or good black-lead pencils and white paper alone should be used, and then only on a sloping desk. Reading should only be permitted for short intervals, ten to fifteen minutes at a time, and then a rest of one or two minutes should be given to the eyes. Large clear type is as essential as a good light falling on the book, and the book should be kept almost erect rather than flat on a table.

Where myopia exists already, glasses correcting the whole of the ametropia should be ordered if the degree is below five, and worn constantly. **Atropine** should be used for several days before prescribing the glasses, and also for some time after the glasses are ordered, so that the patient may not begin to accommodate unduly. If of a higher grade than 5D, it is well to leave 3D uncorrected, and let the patient continue the atropine for a month or six weeks, till all tendency to hold things too near is overcome. As these patients are liable to increase their ametropia, they should be kept under observation for some years.

MYRINGOPLASTY. (See "Ear, Disorders of.")

NÆVUS. *Henry Dwight Chapin, M.D., New York.*

Dr. Thos. H. Holgate ("Arch. Ped.," June, 1889), advises the treatment of nævus by intra-injection of **Alcohol.** A clamp or ring is placed around the nævus to arrest the circulation, then, with a hypodermic syringe needle passed into it through its centre, from 5 to 7 minims of rectified spirit of wine is injected. This operation may be repeated several times.

NAIL. (See "Ingrowing Toe Nail.")

NARCOTIC POISONING (Chronic). *F. de Havilland Hall, M.D.*

Dr. Edward A. Birch reports two cases, one of chronic chloral and the other of chronic opium poisoning, in which cure was effected by means of Indian hemp. In the first case he prescribed half a grain of the **Ext. Cannabis Ind.**, with a few grains of the compound **Colocynth Pill**, to be taken three times a day. The result was an *immediate* improvement, which was followed by complete recovery. In the second case a quarter of a grain of the extract, gradually increasing to a grain and a half, three times a day, was given with the happiest result. He concluded his remarks as follows :—

"The chief point that struck me was the *immediate* action of the drug in appeasing the appetite for the chloral or opium, and in restoring the ability to appreciate food. It seems to supply the place of the poison, to stimulate the appetite, to increase the heart's power, and thus to procure sleep indirectly, as well as directly, by its own sedative effect. Moreover, I am convinced that it is a diuretic, and that this action helped in the above cases. I prescribed the cannabis simply with a view to utilising a well-known remedy for insomnia, but it did much more than procure sleep. I think it will be found that there need be no fear of peremptorily withdrawing the deleterious drug, if hemp be employed. I know that the mere withdrawal of chloral will effect a cure, but at the expense of an interval of suffering which need not be incurred ; and the same in a different degree holds true of opium. Upon one point I would insist—the necessity of concealing the name of the remedial drug from the patient, lest in his endeavour to escape from one form of vice he should fall into another, which can be indulged with facility in any Indian bazaar in the forms of gunjah (the dried flowering tops) ; churrus (the resinous exudation) ; bang or subzee (the larger leaves and capsules) ; or majoon (a compound of bang, butter, and flour.) Hence the prescription should be made as complex as

possible, and at the earliest moment the dose of the extract should be diminished gradually till eventually it is withdrawn altogether from the prescription." ("Lancet," Mar. 30, 1889).

NASO-PHARYNX (Adenoid Vegetations of). (See also "Nose, Diseases of.") *P. Watson Williams, M.B.*

The treatment of these vegetations has given rise to an immense amount of literature, and to the introduction of a correspondingly large number of instruments for their removal. In children they should, if possible, be removed at one sitting, under a general anæsthetic, but in adults it is less difficult to get several sittings till a satisfactory result is obtained, and a local anæsthetic only is necessary. If the vegetations are small, simple scraping with the finger nail, followed by cauterization, for destruction of the remnants of growth, is sufficient.

Larger vegetations should be first removed by Schutz's antero-posterior forceps, followed by curetting with Lennox Browne's movable curette, or sharp spoon on a finger-guard, or by the aid of various curettes on handles. Three recently-introduced forms are figured below (*Fig.* 35.)

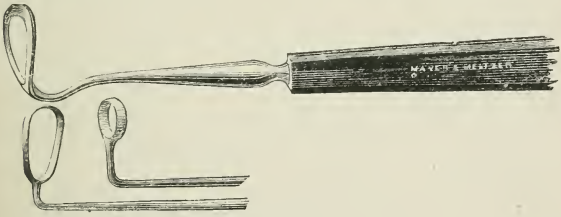


Fig. 35.

Schwartz, of Halle, bathes the naso-pharynx after the operation with a spray of common salt, ¾ per cent. solution, for several days.

Walter Pye, F.R.C.S.

Professor Annandale describes an operation having for its object the exposure of the posterior nares and base of skull, and expresses his belief that it is, in its entirety, new, although in some details it is not original.

Briefly, he states that when the alveolar margins and palatal portions of the upper jaw have been divided along the middle line from before backwards, and when the septum of the nose is cut through, provided that the anterior nares have been first exposed by raising

the soft part by Rouge's plan, the two upper jaws can be separated to the extent of from half an inch to an inch, and access can thus be attained to the posterior nares and the base of the skull. After discussing other methods of removing naso-pharyngeal growths, and showing how in many cases free exposure of the parts is desirable, Prof. Annandale describes the operation, the steps of which are taken in the following order: Exposure of anterior nares, division of septum of nose along its attachment to the jaw, incision and division of the alveolus and hard palate, with or without the soft palate, forcible separation of the jaws, separation and removal of growth by forceps, strapping on the ceraseum, plugging, and finally readjustment of the jaws by one wire suture through the alveolar process, and by horse hair sutures, the soft palate covering the palate bones. Preliminary tracheotomy may be necessary. The advantages claimed are: (1,) Simplicity and absence of resulting deformity; (2,) Should removal be found not to be possible by this operation, it may be extended into a removal of the whole maxilla on the affected side; (3.) The central section is attended with less bleeding than other cutting operations, giving us much exposure to the parts. ("Lancet," 26 Jan., 1889).

NEPHRITIC COLIC.

Synopsis.—(Vol. 1889, p. 57.) Orthosyphon Stamineus; Infusion (v grammes to water, j litre) daily.

NERVE GRAFTING. *Walter Pye, F.R.C.S.*

Dr. Mayo Robson has reported and shown at the Clinical Society a successful case of nerve grafting, which should encourage surgeons in similar cases.

The patient was a girl fourteen years old. A tumour had been growing on the front of the forearm for six years, and latterly more rapidly than before. At the time of operation it was about the size of a hen's egg. It was found on incision to be in the course of the median nerve, which ran right through it; the nerve, therefore, had to be excised. Twelve hours later, after the median loss of sensation had been noted, two and a half inches of the posterior tibial nerve from a leg, which was then being amputated by a colleague, was grafted by Mr. Robson into the divided median. The nerve was carried from one theatre to the other in warm carbolic solution. The ends were stitched together with fine catgut sutures. There was no tension, and the wound healed straightway.

Thirty-six hours later there was slight return of sensation, and five weeks later sensation was perfectly restored. The muscles of the

thumb concerned were still wasted, but not completely paralysed. ("Lancet," Feb. 2, p. 224).

Charles L. Dana, M.D., New York.

It is an established fact in physiology that a nerve once entirely severed, cannot be united by suture, so as to obtain immediate union of the fibres. The restoration of the nerve depends entirely upon the growth of the central fibres into the peripheral end. All attempts at suture and grafting therefore, are of value simply because they favour the easy and quick penetration of the central stump's fibres into the peripheral part.

Dr. Mayo Robson's case of nerve grafting, though interesting and anatomically successful, was not a case of true grafting. Dr. Robson "grafted" two and a half inches of a posterior tibial nerve from a recently amputated leg into the gap made by removal of a tumour from the median nerve. In five weeks sensation was restored, and there was some motor power. ("Med. Press," 1889.)

NERVOUS REFLEX DISORDERS.

Synopsis.—(Vol. 1889, p. 360.) Injection of 20% solution **Cocaine** into urethra when irritation of urethra is cause of neuralgia. Insufflation of tympanic cavity when ear irritation causes epilepsy. **Antipyrin, Belladonna, Opium** and **Iodoform, Suppositories** and **Stretching** the sphincter for chronic spasm or neuralgia of rectum affecting other viscera.

NEURALGIA.

Charles L. Dana, M.D., New York.

M. Luys has devised a set of small revolving mirrors which produce a curious visual effect, amounting sometimes to vertigo, when a patient gazes steadily at them. He reports a case of dental neuralgia (toothache?) cured by them. (See "Hypnotism.")

Chloride of Methyl Spray, as recommended by Devon, was introduced into this country (America), by Dr. George W. Jacoby, two years ago, and recommended by him as a good agent in treating some forms of neuralgia. The cylinders containing the liquid are now made more convenient and easy to manipulate, and they can be had in New York and other cities of the United States. They have to be imported, however, and are quite expensive. No new reports of successes with the spray have been recorded, and it is to be concluded that its range of usefulness is not very great. M. Bardet has proposed before spraying a surface with chloride of methyl, in order to produce local anæsthesia to paint it with glycerine. The revulsive action is less acute and less severe, while the glycerine forms a surface on which the drops of the refrigerant mixture collect, and which may be readily removed after the desired effect has been produced. The use of glycerine is said to entirely do away with the danger of sloughing.

The spray should be thrown on the skin obliquely and only for from one to five seconds in any single spot. Care should be taken in applying it to the face as it may leave a brown discoloration like that made by a blister. The spray is a rapid irritant and serves as a good substitute for the firing iron.

Every now and then someone recommends **Croton Chloral** again in trigeminal neuralgia. Dr. O. Liebreich is quoted as recently reiterating his faith in its usefulness. He recommends its use in doses of 15 to 45 grains, given as follows :—

℞ Alcohol	2 parts.	Butylchloral	1 part.
Water	240 parts.		

Chloride of Ammonium is recommended in neuralgia by Dr. W. T. Greene, who thinks it a strangely neglected drug. This is hardly true just now. It is considerably used in New York, at least for pelvic and other neuralgias and for muscular pains.

Dr. Olt recommends this drug in doses of 7½ to 75 grains daily in the treatment of neuralgia of peripheral origin. It is, he thinks, without action in treatment of neuralgia dependent upon disease of the brain or spinal cord. In this, however, he is mistaken, as **Phenacetin** is often efficacious in the pains of tabes. Dr. Olt gets his best results in trigeminal and occipital neuralgias. He found it useless in sciatica, and of little value in pure tic douloureux.

The Differential Diagnosis of Neuralgia is a subject treated of by Dr. Daniel R. Brower in a clinical lecture in the "Western Medical Reporter," April, 1889.

"*The Modern Treatment of Neuralgia*" is the title of an interesting *brochure* by Dr. Landon Carter Gray. The author dwells especially upon the necessity of diagnosticating neuralgia from neuritis, and of recognizing and treating such constitution factors as malarial toxæmia, lithæmia, rheumatism, gout, etc.

REFERENCES.—"Med. Press," May 15, 1889; "Gaz. Hebom. de Méd. et de Chir., November 23, 1888; "Inter. Klin. Rund.," Dec. 16, 1888; "Lond. Med. Press"; "Zeit. für Thérap.," May 15, 1888.

Synopsis.—(Vol. 1888, p. 376.) **Ol. Gaultheriæ**, ♏xv, in tic.; for temporal and occipital neuralgia and headache, if associated with Eustachian trouble, **Inflation** is useful; application of **Iodised Glycerine** to the pharynx for occipital headache; **Napelline**, granules of 2½ milligrammes each, in obstinate neuralgia; **Amorphous Aconitine**, if the crystalline is not sufficient. R Tinct. Cinchonæ Co. ℥ij; Tinct. Nux Vom. ℥ss; Morphiæ Sulph. gr. ij; Sig. ℥j om. 3 to 5 hor. (Davis); **Cannabis Indica** may succeed when others fail; **Antipyrin**, gr. xv, in neuralgia of hemicrania; injections of **Osmic Acid**, 1% solution. **Acetanilide** (p. 3); **Aconite** (p. 7); **Antipyrin** (p. 14) **Betol** (p. 23); **Collodion Plaster** (p. 43); **Ichthyol** (p. 66); **Methyl** (p.

76); **Parthenium** (p. 81); **Phytolacca** (p. 82), in neuralgia of breast; **Picrate of Ammonium** (p. 83), in malarial neuralgia.

(Vol. 1889, p. 361.) **Antipyrin** in small frequently repeated doses; **Antifebrin** grs vijss to xv, twice or thrice daily. Refrigeration: **Chloride of Methyl Spray, Condensed Carbonic Acid Gas. Phenacetine, Salol,** in neuralgia associated with gout or rheumatism, small doses (gr ½ to ij) were used. Use of galvanic current and hollow carbon electrode filled with **Chloroform. Delphinium Staphisagria,** gr $\frac{1}{60}$ hypodermically every 2 hours (p. 37). **Menthol,** gr. v to xx in supraorbital neuralgia (p. 53). **Saffrol** ♏ xx (p. 64).

NEURALGIA AND ABORTION. (See "Abortion.")

NOSE (Foreign Bodies in). (See also "Ozæna.")

Greville MacDonald, M.D.

Mr. C. W. Dodd recommends the removal of foreign bodies from the nose by forcible blowing through the free nostril by means of india-rubber tubing applied to the mouth of the surgeon, the soft palate being raised either by the child's crying, or by swallowing a mouthful of water.

Reference.—Dodd, "Lancet," Nov. 1888.

Polypus of the Nose.—In removal of mucous polypus of the nose there appears to be a growing opinion in favour of the cold snare over every other means, but especially over the incandescent loop, the action of which cannot be satisfactorily confined to the structure operated upon. Forceps are now almost wholly discarded, though they doubtless have their uses. The day is now gone when any question as to the curability of mucous polypus was permissible. By successful removal and careful cauterization of the stumps, any polypus growing from the concavity or free borders of the middle turbinal can be totally eradicated. But where they are growing from above that body, or where, again, they are accompanied with suppuration indicating disease of the ethmoid bone or the maxillary sinus, we must be more guarded in our prognosis. And even when promising cure in the former cases, we must remember that those constitutional conditions which contribute so strongly to the disease in some individuals, cannot be removed, and that it may be quite possible for fresh growths to arise. Usually, however, we may hold out fair promise of total non-recurrence.

Mr. Cresswell Baber advises an **Alcoholic Spray,** 25 per cent., as recommended by Dr. Miller, of Edinburgh, for shrinking the stumps after removal. Voltolini holds to his method of removing these growths with the sponge. He has discovered that Hippocrates recommended a similar method. Voltolini also strongly asserts that the formidable fibrous naso-pharyngeal polypi must be operated upon *per vias naturales*, and advocates electrolysis for their destruction.

REFERENCES.—Baber, "Brit. Med. Jour.," Sept. 15, 1883; Voltolini, "Diseases of Nose and Naso-Pharynx, with a Treatise on Electrolysis," Breslau, 1889.

Syphilis of the Nose.—Dr. J. N. Mackenzie, of Baltimore, describes a hitherto unstudied condition which he styles "syphilitic fibroid degeneration of the nasal passages." It appears as dense fibrous pedunculated tumours devoid of epithelium, and attached to the turbinated bodies or less often the septum. These are distinguished from gummatous infiltration by the negative results of constitutional treatment, the surrounding anæmia, and the hard, dense sensation communicated by the probes.

Gummatous neoplasms are generally situated on the septum, and, as elsewhere, are generally considered forbidden to surgical interference. Dr. C. Seiler relates two cases where he removed the growths with the sharp spoon, and holds that it is right to do so when they interfere with the functions of the organ.

REFERENCES.—"Jour. of Laryng. and Rhin.," April, 1889; "Inter. Jour. of Surg.," April, 1888.

Deflections of the Septum Nasi.—The deflected septum lying between fixed bounds, it is obviously absurd to attempt straightening it by any such instruments as those advocated by Adams or T. Smith; for the extremities of a straight line obviously are further distant than those of a curved line. As a matter of fact such straightening is seldom demanded, it being sufficient to pare down the thickened portion, which is invariably opposite the prominent angle of deflection. Dr. G. Hope has designed new forceps as substitute for Adams': by punching out the outline of the displaced cartilage or bone fracture becomes possible. Garrigou-Desarènes has also designed new instruments, for which he claims superiority.

REFERENCES.—MacDonald, "Brit. Med. Jour.," Dec, 1888; Hope, "New York Med. Jour.," Dec., 1888; Garrigou-Desarènes, "Jour. de Méd. de Paris," Feb., 1889.

Synopsis.—(Vol 1889, p. 363.) For nasal obstruction: mild **Alkaline** and **Antiseptic Douches** followed by mild **Antiseptic Ointments.** In acute cases avoid lotions and use 2 to 5% **Cocaine** solution by spray or pencil, or an **Ointment of Cocaine** with **Eucalyptus** or **Thymol.** Continued use of graduated dilating tubes where thickening of mucous membrane is slight. **Galvano-Caustic Puncture** for enlarged turbinated body due to erectile tissue, or **Chromic Acid** may be used. **Galvano-Caustic Snare** for pendulous outgrowths. Forcible straightening and application of **Nasal Splint** for deviation of septum, or the use of **Curtis's Nasal Trephine** or the **Nasal Saw,** followed, if necessary, by use of **Nasal Tubes** or **Galvano-Caustic Puncture,** if mucous membrane encroach on the newly formed space. For post nasal adenoids scraping them off with the nail and removing them with

Schech's **Post Nasal Forceps.** In atrophic rhinitis use antiseptic and cleansing treatment and **Continous Current**; insertion of **Cotton Wool Plugs**; application of **Nitrate of Silver** solution (gr. v to ℥j) every other day, or use first **Alkaline** and **Antiseptic Douche** and remove all crusts by forceps, swab, or syringe, and then apply **Glycerine** with **Carbolic Acid** and **Iodine**, or insufflate **Iodoform**, and give tonics or alteratives as required. As a snuff, ℞ Menthol (pulv,) ℥ss, Ammon Chlor., ℥jss, Pulv. Ac. Borac, ℥j, M. Treatment of hay-fever by correction of abnormalities in nose, and as palliative for itching of eyes, inhale **Ol. Menth. Pip.**, and if any sensitive point in nasal mucous membrane can be found, apply **Galvano-Cautery. Calcium Sulphide**, gr. $\frac{1}{10}$ in hypertrophic rhinitis (p 28.) **Concillana Bark Decoction** locally in acute or chronic nasal catarrh (p. 34). **Menthol** 5 to 20% solution applied locally (p. 53).

OBSTETRICS.

A. H. N. Lewers, M.D.

Will drugs produce Abortion?—Dr. Atthill, in an interesting paper on this subject, says: "Personally I know of no emmenagogue which will cause abortion; ergot, quinine, and strychnine, in ordinary medicinal doses, I am satisfied, will not do so . . . . iron is perfectly innocuous."

Dr. Atthill, it should be noted, says "in ordinary medicinal doses." In some cases large doses of quinine appear to have caused abortion, or threatened abortion, but one must be careful to avoid mistaking a casual for a causal connection in instances of the kind.

Pregnancy.—Dr. Charles Wicks records a case of acute tympanites occurring during pregnancy at the sixth month. The patient was cyanotic, had a small pulse, 125; temperature, 100°. Various remedies having been tried without effect, in consultation with Dr. Oliver, of Newcastle, it was decided to puncture the abdomen. This was done in four places with a medium sized trocar. Gas rushed out, and the patient was soon much relieved. Labour came on, and delivery was completed easily in one and a half hours. The patient did well, and in nine days after was able to be up. Dr. Oliver was of opinion that had it not been for puncturing the abdomen, the patient would have died.

Dr. Hanks has written a paper advising the use of electricity in ectopic pregnancy when diagnosis is made at an early stage. It has been, however, clearly established that: (1,) Certainty of diagnosis is impossible in early cases of extra-uterine pregnancy, and hence that cases which recover may not have been cases of extra-uterine pregnancy at all; and, it may be added, that where it seems extremely probable that we have a case of the kind, exploratory abdominal section would be now considered the best treatment; (2,) That all agents used to kill the fœtus in these cases are extremely uncertain in their action. Electricity is no exception to this rule.

Prof. Simpson delivered an important address on the preventive treatment of intra-uterine death at the meeting of the British Medical Association at Glasgow, 1888.

He called attention to the fact that in a large proportion of cases in which a series of abortions, or still-born children, are met with, the cause is syphilis. Probably it is the cause in at least 83 per cent. of these cases. It is usually the husband that is at fault, and Prof. Simpson emphasizes the rule that the husband should be subjected to anti-syphilitic treatment just as carefully as the wife. This class of cases is a most melancholy one. Sometimes parents, one or other having been previously syphilitic, after careful treatment, have healthy children. Yet, it may happen, perhaps from one of the parents being out of health, or from some unexplained cause, that an infant may be born which soon gives evidence of congenital syphilis. It should be said that the preventive treatment of intra-uterine death is chiefly the preventive (not the curative) treatment of syphilis ; and the only effectual preventive treatment in this direction is by the adoption of the Contagious Diseases Acts. That thousands of perfectly innocent women and children are annually affected with this disease is a dreadful fact very terrible to think of. Medical men cannot impress this truth too strongly on those who may have it in their power to bring about the required change in the law.

Dr. Gunther, of Montreux, relates five cases of the vomiting of pregnancy treated by electricity. He used the constant current, applying the anode to the cervix and cathode to the spine, over the lower dorsal vertebræ. He considers it important to use a weak current, and that there should be no intermission. The vomiting ceased in four days at the most, in all the cases. So much more value has been claimed for electricity in different directions than subsequent experience has been found to justify, that many more than five cases would be required to give us adequate material for forming a definite opinion. This is so especially in such a malady as the vomiting of pregnancy, which tends to subside spontaneously as pregnancy advances.

First stage of Labour.—Dr. John Phillips read a paper at the Obstetrical Society of London, in October, 1888, on the value of **Pilocarpine** in obstetric practice. The author concluded that during the dilating and expulsive stages of labour the drug increased and intensified the pains as much as ergot. Pilocarpine was of little or no use for the induction of labour, or in the third stage of labour. In the treatment of puerperal eclampsia there was the special risk of saliva and other secretions accumulating in the

air-passages. On the whole, most practitioners will agree with a remark which fell from Dr. Champneys, in the discussion that followed, to the effect that a consideration of the author's paper had not made him feel anxious to use the drug.

Dr. J. O. Winkle claims for **Antipyrin** in labour that in almost every instance it causes a considerable reduction in suffering, that it slightly diminishes the duration of the first stage, while it has no effect on that of the second stage. The dose given was 15 grains, and this was given in conjunction with (mxxx) **Spt. Ammon. Aromat.** every two hours till three doses had been given. He has never seen any toxic effects produced by the administration of the drug in this way.

Drs. Auvard and Lefebre, on the other hand, have tested antipyrin in similar cases, and conclude that the reduction of suffering in the first stage is only apparent, and probably, when it occurs, is due to psychical impressions—in fact, that the general results from using antipyrin in cases of labour are entirely negative.

Evidently we must at present regard the value of antipyrin in midwifery as not yet determined.

Viburnum Prunifolium appears to be growing in favour as a uterine sedative. It appears to be useful in cases of threatened miscarriage, in cases of false pains occurring some time before the true commencement of labour, and in cases of dysmenorrhœa.

Second Stage of Labour.—Dr. Briggs believes he has discovered a new cause of delay in the second stage, viz., that after the head of the fœtus has passed through the os the latter grasps the neck tightly in some cases, and so produces delay. He has observed this particularly in primiparæ. It seems much more probable that the delay in such cases is due to the resistance of a perinæum that has never before been dilated.

Dr. Archibald Donald read a paper in January, 1889, at the Obstetrical Society on the methods of Craniotomy. As regards the severer cases of pelvic contraction, he advised:—

(1,) Podalic version and extraction of the body.

(2,) Perforation through the roof of the mouth.

(3,) Cephalotripsy of the after-coming head.

(4,) Extraction of the head by means of the cephalotribe, or by traction on the body and lower jaw, combined with supra-pubic pressure.

In cases of marked pelvic deformity, where, for example, the conjugata vera is 2¼ inches or thereabouts, the performance of podalic version, in my own experience, greatly increases the difficulty of perforating and crushing the skull. The arms also are sure to give

rise to trouble, and all the operations necessary for delivery have to be performed with the neck and part of the chest occupying the vagina.

Dr. Green reports a case, in which the patient was a multipara, and had a rachitic pelvis, the true conjugate being 3½ inches. Version was performed, and a child weighing nine pounds extracted. It was then found that there was a rent in the lower uterine segment, and that the placenta had escaped through this, and lay among the intestines. It was removed through the rent. Nothing further seems to have been done. The uterus contracted well, and, although she had a high temperature and rapid pulse, she ultimately made a good recovery.

In cases of this kind it is well to remember that several successful results have followed the practice of passing a large double drainage tube per vaginam into the peritoneal cavity through the rent in the uterus.

Third Stage of Labour.—Dr. Berry Hart considers Credé's method of expressing the placenta most unsatisfactory, indeed, "the most dangerous plan" that can be adopted for separation of the placenta. Under ordinary circumstances, and in the absence of hæmorrhage, he advises that the accoucheur should merely keep his hand on the uterus, doing nothing actively until the lessening of the bulk of the uterus shows that the placenta is separated and being expelled, then, and not before, the expulsion may be completed by "expression."

For my own part, I cannot say that I have had any cause to be dissatisfied with the ordinary Credé method; at the same time Dr. Berry Hart's plan should certainly be tried extensively, so that data for comparing the two methods may be obtained.

Dr. Berry Hart divides cases of adherent placenta into four groups.

(1,) Cases of total adhesion, unaccompanied by hæmorrhage, where it is easy to separate the placenta by the hand, and where the separation occurs in the usual plane of separation.

(2,) Cases of partial adhesion high up in the uterus, the upper part of the placenta extensively adherent, the lower part separated. There is often serious hæmorrhage in these cases.

(3,) Cases where the upper part of the placenta is separated, but where there is an attachment low down. Not usually accompanied by hæmorrhage.

(4,) Cases of total adhesion, with usually little hæmorrhage, but where manual separation is a very difficult proceeding. The separation

is effected where the villi and serotina meet; so that the portion of the latter, which usually should come away, is left behind, perhaps with pieces of placenta attached as well.

The second and fourth groups are the most serious. In the second group, when the placenta is detached above and adherent below, unless the medical attendant promptly effects the separation manually, an alarming or perhaps fatal amount of blood may be lost. In these cases, then, prompt treatment is the essential point.

In the fourth group the chief danger lies in the fact that a layer of dead tissue is left *in utero*, involving a risk of septicæmia. Here, then, the most important thing will be to use an antiseptic intra-uterine douche at the first indication of any such mischief.

It need hardly be said that in all cases where the accoucheur has to pass his hand into the uterus, the latter should be washed out with an antiseptic solution, when the intra-uterine manipulation, whatever it may be, has been completed.

Puerperal Anæmia. Dr. W. Osler says that in five out of nine cases of pernicious anæmia in women, of which he has notes, the condition began in the puerperal period. In many such cases Dr. Osler has found **Arsenic** to act like a specific, though it fails in certain of the cases owing to causes which we do not at present understand.

He recommends an initial dose of ♏v of **Fowler's Solution,** increased gradually to ♏xx or ♏xxx, three times a day. The drug should be continued over a long period, but if vomiting or diarrhœa, etc., are set up, it must be left off for a while. Obviously the administration of arsenic in the way described necessitates the patient being watched very carefully.

Transfusion in Labour. (See "Transfusion.")

Puerperal Fever. (See "Puerperal Fever.")

References.—Atthill, "Brit. Med. Jour.," Feb. 16, 1889; Park, "Brit. Med. Jour.," May 25, 1889; Wicks, "Lancet," May 4, 1889; Hanks, "New York Med. Jour.," Jan. 5, 1889; Simpson, "Brit. Med. Jour.," Oct. 20, 1888; Gunther, "Lancet," Aug. 25, 1888; "Edin. Med. Jour.," Oct., 1888; Winkle, "New York Med. Jour.," Jan. 5, 1889; Auvard and Lefebre, "Bull. Gen. de Thérap.," Oct. 15, 1888; Talbot Jones, "North West. Lancet," Jan. 15, 1889; Lutaud, "Jour. de Méd.," Oct. 7, 1888; R. L. Hinton, "Therap. Gaz.," June 15, 1889; Green, "New York Med. Jour.," Dec. 29, 1888; Barry Hart, "Edin. Med. Jour.," March, 1889; Osler, "Amer. Jour. of Obst.," Sept., 1889.

ŒDEMA.

Synopsis.—(Vol. 1889, p. 56.) **Nerium Odorum**, v centigrammes in pill acts as diuretic and diminishes œdema.

OERTEL CURE. (See "Dietetic Cures.")

ŒSOPHAGUS. *Walter Pye, F.R.C.S.*

Foreign Bodies in.—Foreign bodies may be easily extracted from the œsophagus, according to Dr. Crégny, by directing the patient to swallow a skein of thread, rolled up in a ball and mixed with some agreeable *confiture*. This is fastened to a stout cord some eighteen or twenty inches long, by means of which as soon as the rolled up skein has been swallowed past the body it is pulled up again. Such articles as bones, etc., are stated to be thus easily recovered.

Tubal treatment in Malignant Disease.—The results which Mr. Charters Symonds has attained by this treatment in malignant œsophageal cases, and the care and patience with which he has worked out its details, must be recognized by every surgeon as being of great importance. It is now five years since the use of a short tube was described by him, but a full account of the details of the treatment, and of how its difficulties and complications are to be overcome, appears for the first time in the "Lancet," of 30th March and 6th April, of last year.

The short tube is generally from four to six inches long, made of gum elastic, funnel shaped above, the funnel being sometimes flattened from before backwards, closed below with the eye a quarter of an inch from the end, the tube continuing hollow to the end. A line of plaited silk is attached to the funnel. The tube is of the same calibre throughout, and must be polished inside as well as out.

The object of the tube is to carry fluid foods through the stricture, enabling food to be taken by the mouth. When introduced it rests in the œsophagus with the funnel against the upper end of the stricture, and inasmuch as œsophageal contraction varies in extent and place, the tube has no fixed length, and may lie from eleven to sixteen inches from the teeth. Its calibre is generally from No. 14 to 16 catheter gauge.

The tube is inserted by a whalebone introducer, or simply by a bougie inserted into its funnel end, but the former plan is the best. The introducer consists of a whale bone stem with a gum elastic sheath. The stem goes through to the bottom of the tube and the sheath fits into the funnel, so that the whalebone keeps the tube from doubling up while pressure is made by the sheath.

Introduction.—The exact distance of the stricture from the teeth is

ascertained by a large bougie and marked by a knot on the plaited silk line attached to the tube. The tube is then passed on the introducer, with the head well thrown back, and the silk line held taut. There must be no hurry or force, and if a spasm occur the apparatus must be withdrawn. The tube should be passed on about five inches after the obstruction of the stricture is met with. Finally, the silk is brought out of the mouth and tied round the ear.

The chief accident that may occur is that the silk may be bitten through and swallowed, in which case the tube will be obstructed. When this occurs the silk may be recovered by a snare of wire passed through a tube down to the funnel, but as a rule the tube may safely be pushed through into the stomach and another one inserted. (A tube thus swallowed was passed in sixteen days.) The silk must be watched and carried, if possible, out of the mouth through a gap in the teeth.

If the length of the stricture can be exactly estimated, as is occasionally possible, a tube of that length with an open end would be the best pattern, as suggested by Mr. Clement Lucas.

With regard to the mechanical treatment of malignant stricture of the œsophagus, it may be considered as divided into two periods: (1,) Of pure dysphagia, and (2,) Of dysphagia and of spasmodic cough on swallowing, this being the result of pulmonary complication. Mr. Symonds recommends in the first stage, so long as the patient can take solids, even finely minced, the use of a bougie twice a week, but that as soon as swallowing of fluids is difficult, a short tube should be inserted, rather than a long feeding tube with its necessary frequent introduction.

It often happens, however, that patients are not seen until passage of a bougie is not possible at first. In such a case a short tube can generally be passed if the patient be kept warm and quiet in bed for a couple of days, the œsophagus above the stricture emptied by a bougie, all fluids withheld except just enough to quench the thirst, while nutrition is carried on by enemata containing opium. Then, the patient being moderately under the influence of morphia, a bougie can usually be got through the stricture, and this may be at once followed by a small short tube, say, No. 8 or 10; but if this cannot be effected, a long feeding tube should be passed and retained if possible for a week, after which the passage will retain a short tube.

Provided that spasmodic cough during deglutition does not develop, the patient may wear a short tube until death occur, but as a rule its use will have to be abandoned from this complication, which is characteristic of the second stage of the disease.

The danger of the continued wearing of a long feeding tube, such as that ordinarily employed, is that of ulceration of parts in the neighbourhood of the larynx, especially over the back of the cricoid cartilage. This ulceration can be avoided by using a soft rubber tube, introduced on a whalebone stem.

Treatment by tubage when the obstruction is very low down is difficult, and the plan generally is not advocated by Mr. Symonds to the exclusion of gastrostomy, which is sometimes the only possible proceeding. He claims, however, that on the whole, a greater average of life is obtained by tubage; that the presence of the tube is neither painful nor does it favour ulceration or growth; and explains the observation which he has made, that complications are more serious under tubage, by the supposition that it is due to the prolongation of life secured, and that thus more time is given for the extension of the disease.

Mr. Symonds concludes his paper by publishing the details of twelve additional cases of malignant stricture of the œsophagus treated by tubage, with the occasional use in some of them of bougies. The total duration was in months, as follows: Twelve, eight, five, fifteen, thirteen, nine, five, eighteen, thirteen, thirteen, seven, four; and the duration of life after treatment was commenced: Two months, twenty days, two months, two and a half months, nine months, four months, one month, eleven months, seven months, six months, one month, one month.

OPHTHALMIA. *W. Lang, F.R.C.S.*

Purulent Ophthalmia.—Dehenne has found that the constant application of **Ice** to the lids reduces the swelling more quickly than any other treatment. His plan is to place small pieces of ice between the layers of a piece of absorbent cotton wool, the ice being constantly renewed. This, together with **Sulphate of Eserine,** is sufficient to save any eye. Trousseau relies on **Nitrate of Silver,** in a 2 per cent. solution, brushed over the lids at the earliest moment after the attack.

Meyer has had excellent results in the treatment of these cases, where the following plan was carried out daily. A soft camel hair brush full of **Perchloride of Mercury,** or other antiseptic lotion, is passed into the upper *cul-de-sac*, between the globe and tarsus, without everting the latter, and the sac well washed. In a few days the eye is much better and the discharge has disappeared. This result, Meyer says, is due to the germs being dislodged from the numerous folds of the retro-tarsal conjunctival.

Ophthalmia Neonatorum.—Widmark states that ophthalmia neonatorum has been reduced to 1 in 1000 cases in the Stockholm Maternity Hospital since Créde's method was introduced there in 1885. This method consists in wiping the lids dry immediately after the child's

birth, then washing the lids with clean water and soap. After drying them again, one drop of a 2 per cent. solution of **Nitrate of Silver** is instilled between the lids. This treatment produces a slight swelling of the conjunctiva for the first two days, which then quickly disappears.

Ophthalmia from Exposure to Electric Light.—Terrier says that after exposure to the electric light, without the usual precautions of dark glasses, the patient has symptoms of retinal irritation, scotomata, and subjective perception of colours, followed, a few hours later, by an intolerable sensation of foreign bodies in the eyes, accompanied with severe pains in the eyes and head and intense photophobia. The conjunctiva is much injected, especially round the cornea, the pupils contracted, and lachrymation profuse. The skin of the face is also affected, as in sunstroke, becoming red and painful; and therefore he considers that the light rays are the cause of all the symptoms. Recovery was usually rapid.

Sympathetic Ophthalmia.—Where an eye is enucleated for fear of sympathetic ophthalmia, Abadie always employs **Mercurial Frictions**, and considers that the cases already recorded of sympathetic disease breaking out after enucleation, would not have occurred if this course had been adopted. In sympathetic irritation a germ is not the cause of the affection; he therefore endeavours to divide the ciliary nerve involved, by performing a sclerotomy behind the scar of the original wound. Reymond has found sub-conjunctival injections of **Perchloride of Mercury**, in solution of 1 part in 2000, gradually increasing to 1 part in 1500, to be most efficient in curing such cases.

Synopsis.—(Vol. 1888, p. 381.) *Gonorrhœal.* Lotions: **Boric Acid**, gr. x to ℥j; **Zinc Chloride**, gr. ss to ℥j. *Internally:* **Salicylate of Soda**, or **Antipyrin**; wash out unaffected eye with **Hydrarg. Perchlor.**, 1 in 5000, close it with pad of wool and bandage, and then use Buller's shield to prevent injection entering. *When cornea is affected:* **Eserine Sol.** (gr. ij to ℥j) every three hours applied; **Nitrate of Silver Solution**, 2%, dropped in as preventive.

(Vol. 1889, p. 367.) **Hydrarg. Perchor.**, 1 in 3000; **Sod. Bicarb.**, 8 to 10% solution, instilled 3 or 4 times daily in purulent forms, even in old cases. Daily installation of **Cocaine** with scarification and cauterisation by **Glycerole of Copper** in granular conjunctivitis. For trachoma, **Sol. Hydrarg. Perchlor.**, 1 in 300 or 500 brushed on lids, and washing out eyes every 2 hours with a warm solution in 7000. R Iodine, j part, Potass. Iodid ij parts, Water, 5000 parts, gave good results; pressing out the trachoma granules and then irrigating with corrosive sublimate solution.

OPHTHALMITIS. (See "Eye, Diseases of.")

ORCHITIS.

Synopsis.—(Vol. 1889, p. 369.) Full and repeated doses of **Quinine** in malarial orchitis; Pulsatilla.

ORTHOPÆDICS. *Bernard Roth, F.R.C.S.*

The Orthopædic Surgery of Chronic Paralysis.—We propose making our paper as practical as possible, because the knowledge of a few simple orthopædic contrivances and manipulations will often enable a medical man in general practice to add much to the comfort of innumerable sufferers of all ages from childhood upwards.

We will take first of all that simple yet troublesome paralysis known as *Foot-drop*, which is due to more or less complete paralysis of the anterior tibial muscles. It occurs frequently in Infantile Paralysis, either alone or associated with paralysis of other muscles, and it is also one of the chief impediments to walking in the convalescence of adults after an attack of hemiplegia or paraplegia. Any one who has watched the violent efforts of a patient endeavouring to walk with a partially paralyzed leg will see that at each step the toes scrape the ground and are apt to trip the sufferer at any moment; there being not sufficient power to raise the whole limb sufficiently high to clear the ground with the dropped foot, the patient describes with much effort a semi-circumduction at the hip, and even then his toes catch the ground and raise dust when out of doors. By the simple device of an elevating spring attached to the boot, the foot can be kept at a right angle or less with the leg, and a slight flexion of the hip and knee joints is now sufficient for carrying the foot directly forwards. For many years we have employed for this purpose a spiral S steel spring attached to the outer side of an iron splint, with a joint opposite the ankle fixed below into the outer side of the heel of the boot, and carried upwards to a band round the leg below the knee. This splint is useful, but it is rather a prominent object, and for the last two years we have employed a new form of foot-drop splint. It consists of a curved rod (B C) of well-tempered steel, flattened from before backwards, and moulded to the posterior outline of the leg below the knee. The upper end (B) of the spring fits a socket in the back of an ordinary transverse leather band (A) buckled round the calf, while the lower end (C) fits a hole in the back of the heel of the boot, where it may either be a fixture or made to extend with a spring catch to D in front of the heel. The advantage of this

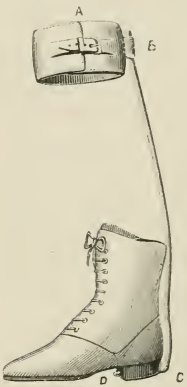


Fig. 36.

spring-catch in the heel allows of the same splint being used with different boots. A steel plate should be embedded in the sole to prevent the latter yielding to the weight of the foot. When the splint is not being worn the sole of the boot should form a somewhat acute angle with the spring, as shown in *Fig.* 36. The strength of the spring should be sufficient to keep the patient's foot at a right angle with the leg during walking; at the same time it should not be so strong as to prevent plantar extension, if the patient still retains that power and wishes to exert it.

The following advantages are claimed for this new foot-drop splint. First and foremost, its simplicity and durability as compared with the constant renewing of india-rubber tractors and the frequent breakage of complicated steel springs; next, its sightliness from the spring being placed behind the leg, so that it is scarcely noticeable while being worn; then its lightness and its non-liability to catch the dress, and lastly its cheapness. Messrs. Mayer and Meltzer, of Great Portland Street, London, W., manufacture the splint, and the only measurements required when the patient cannot leave home are the circumference of the calf and the distance from the heel to the point of the calf where the posterior surface of the thigh meets it when the knee is well flexed.

Before dismissing Foot-drop, it will be useful to discuss the question of tenotomy of a shortened tendo Achillis in infantile paralysis. When the foot can be brought nearly or almost to a right angle with the leg, no operation should be thought of, as the use of the foot-drop splint worn continuously at night as well as by day for a few weeks will gradually overcome the contraction of the heel tendon. Again, where there is extreme or complete wasting of the muscles of the leg, shown by there being no reaction whatever to electricity, it is often wiser to leave even a severely contracted tendon Achilles alone, as it gives some fixation to the foot, whereas if the tendon is divided and the foot brought to a right angle or less, it will be so mobile and unstable that it is even more useless than before the operation. Tenotomy of the tendon Achilles should only be advised where there is still some decided voluntary power left in the anterior tibial muscles.

Flat-foot frequently occurs in infantile paralysis, and is far more efficiently supported by H. O. Thomas' wedged-shaped sole than by a so-called valgus pad placed inside the boot. The device of the wedge-shaped sole with the base inside and the apex outside, tilts or rotates outwards the foot on the longitudinal or antero-posterior axis, and carries the lower end of the tibia towards the outer margin of the

foot, and thus removes all or most of the pressure inwards of the weight of the body at each step as transmitted through the lower end of the tibia from over the tarsal arch. The increased thickness of the sole should be a half inch or more, according to the severity of the case; an addition of a corresponding half inch or more is added to the inner margin of the heel, and this increased thickness gradually diminishes to nothing at the outer margin, which should be protected by a thin plate of iron or by steel studs, to prevent farther differences of level of the two halves of the heel from wear. The same remarks apply to the half inch increased thickness of the sole of the boot, which gradually tapers to nothing at the tip of the sole, as well as at its outer margin. This wedge sole can be easily applied to boots or shoes already worn, and any intelligent bootmaker can carry out the necessary alteration.

Contraction of the Ham-strings, causing more or less permanent flexion of the knee-joint, is almost confined to cases of infantile paralysis, due to paralysis of the quadriceps extensor muscle of the knee, while the knee flexors generally still retain some voluntary power of contraction: permanent flexion of the knee is sometimes found even when the flexors are also completely paralyzed; in that case the deformity is due to the knees having been allowed to remain for many months in a flexed position while the patient was in bed. In all these paralyzed cases of contracted knee the ligaments and capsule of the joint have become shortened posteriorly, so that tenotomy of the tendons in the ham is not sufficient to enable the surgeon to extend the knee; to do so effectually, the posterior ligaments, as well as those in the interior of the joint, would have to be divided, and even then great difficulty is frequently experienced in straightening the knee.

Fig. 37.

A more satisfactory method of straightening the knee is by the application of a Thomas' knee extension splint (*Fig.* 37). This consists of a well padded thigh ring made to fit against the pelvis, while to the lower end of the splint, which projects several inches beyond the foot, are fixed the cords of the extension plasters, which are attached to each side of the calf below the knee by means of a roller bandage. A few turns of a roller bandage are then applied round the knee and splint, just sufficiently tight to keep the limb steady. After two or three days the extension cords and the bandage round the knee will be found to be loose, due to some relaxation of the contraction of the knee, and they must therefore be tightened. This is repeated from time to

time till the knee is quite straight. No force is employed in adjusting the splint and bandages, so that the patient is comfortable during the day, but in most cases will begin to have discomfort or pain towards night, from the tendency of the knee to become more flexed on going to sleep; and at times severe spasms of the contracted knee flexors are experienced, and a more or less sleepless night is the result. Firm stroking down of the limb often gives relief, and after a few nights of restlessness the patient's limb gradually accommodates itself to its new surroundings, and the pains disappear.

It is as well to prepare the patient's friends for this trouble at night, before the commencement of the treatment. The knee joint frequently becomes tender and painful from the gradual stretching and yielding of the tissues on the flexion aspect of the limb. Generally by the end of three or four weeks the knee can be fully extended without any force, and the splint can be replaced by a so-called "Calliper" knee splint,* also invented by Mr. H. O. Thomas. This has the lower ends of the longitudinal iron rods separate and bent inwards, and made to fit a brass tube inserted in the heel of the boot. I have found it useful to have the lower end of the extension knee splint made adjustable with screws, so that the calliper lower ends can be substituted without changing the upper portions of the splint as shown in *Fig.* 38. When the hip joint is only slightly contracted, by the time the knees have become straight the former will be also straight, if the patient has been kept lying most of the time. When, however, the hips are much contracted, Thomas' double hip splint should be used; the amount of contraction of the hip is best gauged by the employment of Thomas' test. This test is applied by laying the patient supine, flexing one thigh as far as possible on to the abdomen, while the patient is lying supine on a table or hard couch, so as to obliterate all lumbar hollowing, and then ascertaining how far the other hip can be extended. When the knees are likewise contracted, they can be treated at the same time as the hips, with the double hip splint, extension being applied to the legs below the knee and attached to the lower end of the hip splint. Severe cases of hip and knee contraction generally require three months lying in the splint before the limbs are straight; this may appear long, but it is generally of little consequence, as most of these cases are otherwise condemned to life-long beds of crippledom and to utter incapacity of standing or walking.

Fig. 38.

*Note.—I strongly advise surgeons to obtain these splints direct from Mr. Critchley, Surgical Instrument Maker, Liverpool, as most of those obtained in London, or elsewhere, are not properly made, especially with regard to the padding of the thigh ring.

I will conclude with a short exposition of the two general principles to be followed in the orthopædic treatment of chronic paralysis: (1,) The improvement of the power of those affected muscles which have still some voluntary power left; and (2,) The prevention of the onset of any deformity, or, if this be already present, to reduce it to a minimum.

(1,) *To improve the power of those affected muscles which have still some voluntary power left.*—The first thing to be done is to correct the lowering of temperature, nearly always present, of the limb or limbs. If one leg is affected, the friends should be told not to be satisfied unless it is as warm as the healthy one. It will be generally found that, after a night's rest in bed, the paralyzed leg will be perfectly warm. The patient should be quickly sponged all over, on rising, with tepid water, followed by good rubbing and drying, and sufficient extra clothing applied to the affected limb. Loosely knitted woollen stockings, thick cloth leggings, or best of all, cloth leggings lined with cat's skin, or other fur, should be constantly worn during the day.

Warm baths, temperature 98 to 100° Fahr., for from ten to twenty minutes every evening, are most useful. For young patients of from five to ten years old a small barrel standing on end answers admirably, as the patient can stand in it up to the waist or neck in water, if required, and a smaller quantity of hot water is needed. The bath should be followed by a rapid sponging of the whole body with cold water, so that no undue sensitiveness to changes of temperature be induced. If properly applied, the cold sponging produces such a reaction after the bath, that the pale paralyzed limb becomes as red as a boiled lobster.

Next, *massage* or rubbing is specially indicated, and although many medical men employ it, it is seldom practised sufficiently long daily, or with enough force. Half an hour, or an hour, twice daily, is often hardly enough. In every case the rubbing should be practically superintended by the surgeon for the first time or two. In cases of long standing, more or less of the wasted muscle is replaced by tenacious adipose tissue, through which the pressure of the rubber's hands has to be transmitted to reach the diminished mass of the muscle.

The rubbing or massage I employ may be roughly classed as kneading, circular friction with the thumb, fulling, and firm stroking down.

"*Kneading*" is a combination of grasping and large pinching and pressure, with the two hands used alternately, one after the other, so that whatever is left of the wasted muscle, is thoroughly squeezed and

moved about. As considerable force is required, the skin should be protected from abrasion by lubrication with lanolin, olive oil, or other innocuous substance.

"*Circular friction by the thumb*" is done as follows: The operator's thumb-end is firmly placed on any given spot, and while considerable pressure is exerted, describes small circles, ten times from right to left and ten times from left to right. A spot an inch higher or lower, or to one side, is then treated in the same way, and so on, until every part of the muscle has been thoroughly manipulated. This method of rubbing is very useful when the space occupied by the wasted muscle is small, as in the case of the anterior tibial muscles, or of the muscles on the anterior or posterior aspects of the forearm, etc. It is, however, equally efficacious for large muscles—for example, the quadriceps extensor of the knee, or the glutei.

"*Fulling*" acts less directly on the muscles, but rather on the whole of the tissues of the paralytic limb; it is effected by a rapid to-and-fro alternate gliding of the two palms on opposite sides of the limb, which is at the same time as firmly compressed as possible. If the leg is to be "fulled," the operator begins close to the groin and gradually works his way down to the foot, moving the hands rapidly to and fro the whole time. The first time the hands should be on the outer and inner aspects of the leg; the next, they should be placed higher on one side and lower on the other; the third time this position is reversed, and finally the hands are placed posteriorly and anteriorly to the limb. Such a manipulation, for five minutes vigorously carried out, will seldom fail in producing a most wholesome glow, and increased circulation in the blue-looking and chilly limb. A dozen or two firm "strokings down" of the leg is soothing to the patient, and is an appropriate ending to the rubbing.

Even more important than the rubbing or massage is the methodical exercise of those muscles which have partially recovered. Every muscle which is still under the control of the will, if it be ever so slight, should be acted upon; for whenever, by a great voluntary effort, a patient can contract a paralytic muscle, an increased amount of power can be obtained by long continued perseverance in methodical exercise. "Medical gymnastics," by which each muscle or group of muscles is made to contract, and then gradually relax, at first actively, and then against resistance by the surgeon, are most efficacious. Although faradisation is useful when the voluntary power is very feeble, or not yet present, it cannot be compared to this treatment by exercise, with resistance alternately by the surgeon and the patient.

The following is a short description of some of the simple exercises required in cases of chronic paralysis. If there be any weakness of the spine or thorax, I must refer those interested in the subject to my little book, "The Treatment of Lateral Curvature of the Spine," recently published by H. K. Lewis, London.

Hip-joint.—The gluteal muscles are by far the most important of the muscles of the lower extremities, for, if their power be left, or if they can be sufficiently developed, the patient may eventually be made to walk, with or without sticks, even if all the other muscles of the legs are utterly wasted. Thus, if the quadriceps extensor muscle of each knee-joint has been lost, the patient may sometimes be able to stand erect or walk, by keeping the knees extended, without splint, by means of the posterior and crucial ligaments of the joint, with the help of the gluteal muscles, and a slight inclination forwards of the trunk. I have had several patients who were enabled to walk fairly well without any thigh-muscles, front or back, in whom the gluteal muscles had become sufficiently developed under treatment, a Thomas' splint for the knee being all that was required to keep that joint locked in a position of complete extension.

An efficient exercise for the *gluteal muscles* is for the patient to lie prone and to raise the leg, with knee kept extended, from off the ground; if the gluteal muscles are too weak, the surgeon, or the properly instructed assistant, helps the patient by supporting more or less of the weight of the limb, by placing the hand under the front of the knee; this is really an extension of the hip. After a few days, circumduction of the hip from right to left, and *vice versâ*, is to be tried ten or twelve times each way. By the time the patient has increased in power, and finds this circumduction easy, its severity can be augmented by the surgeon's hand pressing downwards with more or less force against the back of the heel, or by placing a double bag of shot or bullets, weighing half to five pounds or more, over the tendo Achillis. If the abductor muscles of the hip are weak, the simple expedient of making the patient lie sideways, and doing the hip-circumduction with the uppermost leg, will bring them into action. For the *flexors of the hip*, the same circumduction is to be done with the patient lying on his back and the knee kept extended, for, if this cannot be done voluntarily, the knee can be flexed and the leg allowed to hang over the end of the couch or table on which the patient is lying. The patient can easily be taught to rotate the limb out at the hip, at first, if necessary, with assistance, and, finally, against resistance.

Knee-joint.—For exercising the *extensors*, the patient, lying supine, has the knees flexed, and the legs hanging vertically over the end of

the padded table on which he lies; he is requested slowly to extend one knee: if the weight of the leg is too great, the surgeon assists by supporting the foot while the patient voluntarily performs the movement. The *flexors of the knee* are easily brought into action by the patient lying prone and trying to lift the foot off the ground by slowly flexing the knee, at first, if very weak, with the help of the surgeon, and later, when stronger, against the resistance of the surgeon's hand.

Ankle-joint.—The patient, sitting, has the leg supported on a chair, with the foot projecting beyond; flexion, extension, adduction, abduction, and circumduction are executed either voluntarily by the patient or passively by the surgeon; if the former, when strong enough, also against the surgeon's resistance.

The Shoulder-joint.—The patient lying on the back on a table or couch, circumduction from before backwards is one of the exercises most easily taught, if there be any trace of voluntary power, the elbow and wrist being kept extended, either voluntary, or, if that be impossible, by means of a light wooden splint. To bring the *scapular muscles* specially into action, the patient, lying supine, with the arms down by the sides of the trunk, or abducted at right angles to the body, or extended upwards by the side of the head, is told to resist the arms being brought forward by the surgeon from either of the above positions, and then voluntarily returned to the initial position against the surgeon's gradually yielding resistance, the elbows being kept well extended. The rhomboidei and subscapularis muscles are chiefly brought into action in the second movement with the arms at right angles to the trunk.

The Elbow-joint.—The upper arm being fixed by the surgeon against the table on which the patient lies, the motion of flexion or extension is easily resisted by the surgeon's other hand, the elbow being either flexed or extended to begin with. Pronation and supination, also flexion and extension of the *wrist*, present no difficulty, if a little time and attention are devoted to carrying out similar exercises to those already described. So, again, the same remarks apply to flexion, extension, adduction, and abduction of individual *fingers*.

Throughout all these exercises care should be taken that, while the patient is trying to contract (that is, exercise), he is prevented involuntarily contracting other stronger or normal muscles, which should be kept at rest, and he should always count aloud one to ten, so as to prevent straining or holding the breath.

(2,) *To prevent the onset of any deformity, or, if this be already present, to reduce it to a minimum.*—Where one limb is affected, it is

most important to prevent shortening of the bones, as the result of a less active nutrition as compared with the opposite sound limb. Where one leg has already become shortened as the result of a quicker growth of the healthy leg, before the patient has come under observation, it is nearly always possible to prevent further increase of the difference by strictly carrying out the suggestions already given. I believe that it is even possible in some cases to accelerate the growth of an already shortened limb, the result of infantile paralysis, by keeping it warmer than its healthy fellow by extra clothing it, especially during the summer months: taking as an analogy those cases of giant growth of one limb, where, as the result of some congenital anomaly of the circulation, more blood has been sent to it than to the corresponding normal limb. It is essential, for the prevention of lateral spinal curvature to have the lengths of the two limbs equalised by a thicker sole on the boot of the shorter.

In the upper extremities, where one arm only is paralyzed, it is often most useful to bandage the healthy one close to the body for some hours daily, so as to induce the patient to use the weak arm as much as possible. In all cases of severe infantile paralysis, it is essential to stop at once all unnatural modes of progression, such as crawling, or walking on the hands and feet, hopping, or running with the legs much flexed at the hips and knees, as it is impossible to re-educate the paralyzed child to walk in a normal or improved manner, as long as the habitual vicious methods of locomotion are permitted.

OTALGIA NERVOSA. (See "Ear, Diseases of.")

OVARIOTOMY. *J. W. Taylor, F.R.C.S.*

Recent papers on this well-worn subject have dealt mainly: (1,) With the abuse of antiseptics during its performance; (2,) With the removal of a second ovarian tumour from the same patient; and, (3,) With the rotation of ovarian tumours.

Dr. Bantock, in a report of two hundred and thirty-eight cases of completed ovariotomy, draws special attention to the danger of using anything beyond plain water when washing out the peritoneum, and attributes a fatal case of Dr. Polaillon's to carbolic acid poisoning. Dr. Bantock is at one with the "Birmingham School" in the belief that clean unmedicated water is best for the surgeon's use during operation; as also in the following points, that opium and ice are hurtful to the patient after operation, and that vomiting is best controlled by temporary abstinence from food or drink. He is at variance with us in the use of chloroform as his sole anæsthetic, and in his avoidance of purgatives when any symptoms of peritonitis are present

Sir Spencer Wells's paper on secondary ovariotomy raises the important question whether both ovaries should be removed when one is the seat of an ovarian tumour. His own opinion and that of most English operators appears to be decidedly against removal, unless evident signs of disease are present.

Mr. Thornton's contribution is on fifty-seven cases of twisted pedicle collected by him from six hundred cases of ovariotomy—a very high proportion, which is difficult to explain unless every minor case is included. Mr. Thornton has distinctly felt "the tender twisted pedicle" in a large number of his cases before operation. He notices sudden increase in the size of the tumour with peritonitic symptoms as the leading diagnostic phenomena, and appears to have watched several cases pass through this stage and improve before the operation of removal was performed.

REFERENCES.—Bantock, "Brit. Gyn." Jan. 1889. Wells, "New York Med. Jour.," Dec. 22, 1889. Thornton, "Amer. Jour. of Med. Sc.," Oct. 1888. Polaillon, S: "Bull. et Mem. de la Soc. Obs. et Gyn. de Paris," Nov. 1888. Miller. "Amer. Jour. Obs.," July, 1889. Taber Johnson, "Ibid."

OVARITIS. (See "Uterine Appendages, Diseases of.")

OZÆNA. (See also "Pyopion Ulcer.") *Greville MacDonald, M.D.*

This disease, like so many incurable affections, is constantly demanding attention, not only on account of its frequent occurrence, but also because of the number of new remedies that are constantly being vaunted as infallible. These are nearly all in the way of deodorants or antiseptics, which, in the usual methods of application, do little more than alleviate the most distressing symptoms for a longer or shorter period. Dr. Hartman, of Baltimore, strongly endorses Dr. Delavan's opinion as to the treatment of atrophic rhinitis with the galvanic current. The latter applies the positive pole of a constant current battery to the nape of the neck, and the negative directly to the mucous membrane by means of a piece of copper wire enclosed in a pledget of moistened cotton wool. The strength of the current should range between four and seven milliampères, and the duration should be long enough to excite a slight watery discharge. The first essential, as we consider, to successful treatment, is the thorough and successful cleansing of the nasal passages and naso-pharynx, by the medical man himself. Every smallest particle of crust must be removed by syringing, spraying, or with pledgets of cotton-wool on a probe, according to convenience; and, for the successful performance of this often highly unpleasant process, a good light and speculum are

essential. As soon as the nose is clean, it should be plugged with cotton wool to prevent the drying and retention of the muco-pus, which we have always considered the *fons et origo* of the atrophy which ultimately attacks every tissue in the nose. In such cases, be it noted, mouth-breathing must be far less pernicious than nose-breathing. Often this cleansing must be performed daily for two or three weeks, gradually lengthening the interval until the patient can be entrusted to effect it herself. We find the best deodorant, **Sanitas Fluid,** diluted 1 in 20 or 30, and quite sufficient, in most cases, for producing a cure, if the cleansing is conducted in the manner described.

Dr. Ruauet, after cleansing the choanæ of the inspissated crusts, swabs out the nose with **Camphorated Naphthol** in **Vaseline,** and inserts into the passage a tampon saturated with the following solution :—

℞ Naphthol	12 parts	Aq. Dest.	400 parts
Tr. Quillaiæ	88 parts		

The tampon he leaves *in situ* for fifteen minutes.

Dr. J. A. Baetta Neves has used **Chlorate of Potash** (1 in 30) successfully. Dr. Sidlo finds **Glycerine** (25 per cent.) very serviceable. Trousseau relates the case of a young girl suffering from an ulcer of the left cornea, with hypopion, and ordinary ozæna. The ulceration failed to heal until the nose had been treated. He has observed eleven similar cases.

REFERENCES.—Hartman, "New York Med. Jour.," March, 1889; Delavan, "New York Med. Jour.," March, 1887; MacDonald, "Forms of Nasal Obstruction," 1887; Ruauet, "Arch. de Laryng.," April, 1889; Neves, "Brit. Med. Jour.," March, 1889; Sidlo, "Lancet," March, 1889; Trousseau, "Soc. de l'Elysée," April, 1889.

Synopsis.—(Vol. 1888.) **Sodium Iodide** (p. 66) ; **Iodol** (p. 68).

PAGET'S DISEASE OF NIPPLE. (See "Breast.")

PAIN (Treatment of in Abdominal disease).

Synopsis.—(Vol. 1889, p. 371.) **Codeine,** gr. j, in a teaspoonful of syrup, and repeated every 2 or 3 hours, or in pill (gr. ss, with **Ext. Gentianæ,** t.d., and increased to j grain) in malignant disease. **Conium Ointment** in rectal pain, vaginismus and hæmorrhoids, and in cases of fissure add **Fer. Persulph.,** grs. x or xij to **Ung. Conii,** ℥j.

PANCREAS (Diseases of). *A. W. Mayo Robson, F.R.C.S.*

In the "Brit. Med. Jour." for June 8th, 1889, will be found an account, by Prof. Annandale, of a case of pancreatic cyst cured by abdominal section and drainage after aspiration had failed.

Our present knowledge of the surgery of the pancreas is chiefly due to Dr. Senn, who has performed numerous experiments on animals,

and has collected a considerable series of cases. His conclusions are briefly as follows: (1,) Complete extirpation is always fatal; (2,) Partial excision is feasible and justifiable; (3,) Complete obstruction of the pancreatic duct, uncomplicated with pathological lesions in the parenchyma, never results in cyst formation; (4,) The cause of cyst formation is chiefly an arrest of the absorption of pancreatic juice, due either to an admixture of pathological products rendering it incapable of absorption, or to a loss of function in this direction of the vessels which perform this task; (5,) In simple obstruction of the duct the pancreatic juice is re-absorbed; (6,) In cases in which normal pancreatic tissue is found in the cyst wall, the obstruction must be incomplete, as complete obstruction of the duct produces atrophy and degeneration; (7,) Gradual atrophy of the pancreas is not incompatible with health; (8,) Extravasation of fresh normal juice into the peritoneal cavity is promptly absorbed, as is also crushed or lacerated pancreatic tissue if aseptic; (9,) Limited detachment of the mesentery from the duodenum as required in pancreatic operations is not followed by gangrene; (10,) In operations on the head of the pancreas the duct should be left in physiological connection with the tail of the gland; (11,) The formation of external pancreatic fistula by abdominal section is indicated in cases of cysts, abscesses, gangrene, and hæmorrhage into the pancreas from a local cause, in preference to extirpation, as practised by Reidel and Billroth. When an anterior fistula cannot be formed lumbar drainage should be established; (12,) Removal of impacted pancreatic calculus in the duodenal extremity of the duct by taxis or incision should be practised when the common bile duct is compressed by the calculus, and in such cases extravasation of bile may be avoided by preliminary aspiration of the distended bile ducts. The chief difficulty is the diagnosis, but this can for the most part be accomplished during the first stage of any operative procedure.

In the "New York Med. Record," 1889, I., 8-9-10, is a paper by Dr. Fitz on Acute Pancreatitis, which will well repay perusal.

For diagnosis and reference to other papers, see the "Medical Annual" for 1889.

F. de Havilland Hall, M.D.

What is the clinical significance of clay-coloured stools without jaundice?—Dr. T. J. Walker has given particulars of two cases in which during life a persistent symptom was the absence of colour in the fæces, and in which the diagnosis made of obstruction of the pancreatic duct, with a healthy condition of the bile-duct, was confirmed by the necropsy. From these cases Dr. Walker concludes: (1,) That

the formation of hydrobilirubin, the colouring matter of the fæces, depended on the mutual reaction of the bile and pancreatic fluid, under the influences met with in the intestinal tract; (2,) That in disease a deficiency of pancreatic fluid would, equally with a deficiency of bile, cause the pathological condition of colourless or clay-coloured stools; (3,) That since, according to the most recent physiological researches, that portion only of the coloured constituents of the bile which had been converted into hydrobilirubin was excreted in the fæces, while the unchanged bilirubin, bilifuscin, and biliverdin were absorbed, it followed that, if hydrobilirubin could not be produced without the aid of the pancreas, that organ must have an important *rôle* in regulating what proportion of the bile entering the intestines should be absorbed and what thrown off in the fæces.

REFERENCES.—"Brit. Med. Jour.," Mar. 30, 1889, p. 711; Pope, "Ann. of Surg.," July, 1889, p. 69.

PANNUS. *W. Lang, F.R.C.S.*

Grisning has found the following treatment of pannus to be very satisfactory. In cases were the lids are smooth and free from granulations, he scrapes away the superficial tissue and blood vessels with an ordinary spud, leaving the cornea up to the conjunctival margin quite clear. The eye is tied up, and the resulting grey membrane, which forms on the following day, may be removed, or comes away by itself in a few days. At the end of two or three weeks the sight is greatly improved, the cornea being nearly clear.

PARALYSIS.

Synopsis.—(Vol. 1888, p. 102.) **Tangena.**

(Vol. 1889, p. 374.) **Salol** in cystitis due to myelitis. In locomotor ataxia injunctions of **Mercurial Ointment** (5j daily) if due to syphilis, following this by **Pot. Iodid.**, grs. v to xv thrice daily, adding **Ext. Belladonn.** ·05 gramme. After this the use of Nauheim and Tölz mineral springs. In non-specific cases, **Nitrate of Silver**; for pains, **Antipyrin** hypodermically; for inco-ordination, **Salicylate of Physostigmine** (gr. $\frac{1}{3}$, aq. 5iij, and inject about gr. $\frac{1}{20}$). Saline baths for torpid cases. If patients cannot leave home use warm bran, or weak sulphur baths (1 to 3 pounds of **Bran** boiled with 1 or $1\frac{1}{2}$ gallons of water and added to the water of the bath, or **Sulphate of Potassium**, $1\frac{1}{2}$ to $3\frac{1}{2}$ oz. for one bath, or the same quantity **Subsulphate of Soda** with an ounce of **Vinegar**). **Theine**, grs. iij hypodermically along spine to relieve pain, or **Antifebrin** in gr. xxx as maximum dose; grs. vij as average dose given with wine. **Hyoscin**, gr. $\frac{1}{300}$ to $\frac{1}{150}$ hypodermically, controls movements (p. 45).

PEDICULI PUBIS (Application of Ether Spray in).

In the "Monat. für Prakt. Derm." it is proposed to destroy pediculi pubis by a single application of **Ether** in spray. This procedure is

less injurious to the skin than the application of chloroform, which also accomplishes the same object. ("Med. News," Oct. 27th, p. 473.)

PEMPHIGUS.

Synopsis.—(Vol. 1889, p. 377.) Arsenic in increasing doses. Quinine, Ol. Morrh. or Iron, with good diet. *Locally:* Simple Ointment, Calamine Lotion, Dusting Powder, Oleate of Zinc or Boracic Ointment.

PERINÆORRHAPHY. *Fancourt Barnes, M.D., Ch.M., M.R.C.P.*

In a paper which I wrote last year on the subject of lacerated perinæums I pointed out some of the advantages of the method used by Lawson Tait. It is now five years since I first resorted to Mr. Lawson Tait's method of restoring ruptured perinæums by "flap-splitting." From the first, the operation gave such satisfactory results that I have treated every case which has come under my care by this method. The operation is difficult to describe; it should be seen. It consists in splitting the recto-vaginal septum and the torn portions of the perinæum up each side of the vulvar orifice with scissors, and then bringing the parts together by sutures. No tissue is removed, so that

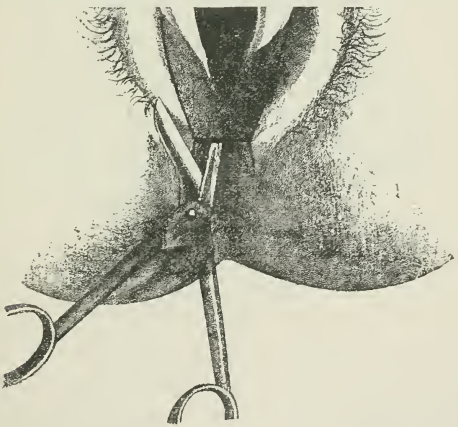


Fig. 39.—Shows the arrangement of the splitting by the scissors to form the H incision.

if union does not take place, the patient is in no way the worse, and the conditions are as good as before, for a new operation. The old plan of paring away the mucous membrane of the vagina is most un-

scientific, as each time the operation fails the patient loses some vaginal tissue, until in some cases I have seen most of the posterior vaginal wall has disappeared. In several such cases I have been able to completely restore the perinæum by Lawson Tait's method. Since I have been using this method, various surgeons have been present at my operations and the consensus of opinion has been that it is a great improvement on the old paring plan. Sir Spencer Wells, who has been present on two occasions, said it was a great improvement on the old method. I feel sure that medical men, who have only seen the results of the old operation, naturally hesitate to advise perinæorrhaphy in cases of lacerated perinæum, because they know that it is always possible that the patient may be in a worse condition after the operation than before. This can never be the case in Lawson Tait's method.

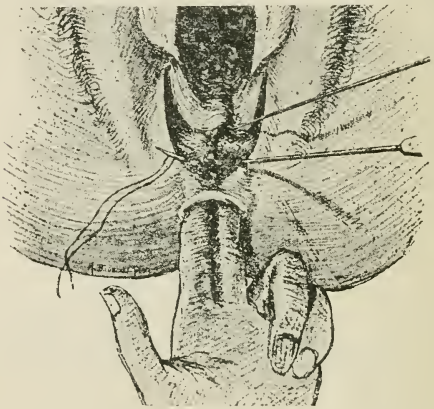


Fig. 40.—Shows the fingers in the rectum to guide the suture needle in its passage across the perinæum.

The time occupied in the operation is very short. In cases where the laceration extends into the bowel and up the vagina, the operation is usually completed in seven minutes. Where the sphincter ani is intact the operation rarely occupies more than four minutes. The accompanying drawings (*Figs.* 39, 40, and 41) made by my friend Professor Vulliett, of Geneva, after seeing me do the operation, give a good idea of the several steps in the operation.

The following are some typical cases of the operation when undertaken for completed rupture through the sphincter :—

Case 1.—February 24th, 1885, R. H. age 20, married two years ; two children. Last pregnancy, October 16th, 1884. Medical history : Torn at first confinement, 1st August, 1883. Instrumental. Can retain motions when solid; when fluid they often run away. Leucorrhœa. Present condition : Complete absence of perinæal body. which had sloughed away. Perinæum tore throughout sphincter. March 12th : Operation, ether. Perinæum repaired in usual way, 18th : Catamenia appeared. 22nd : Catamenia ceased. 23rd : All four sutures removed. 24th : Bowels opened freely yesterday; some pain. April 8th : Operation quite successful. Good perinæum, with control over sphincter.

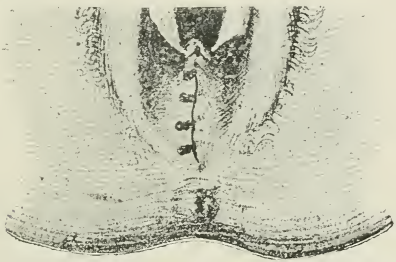


Fig. 41.—Shows the sutures *in situ*, and wound closed up.

Case 2.—March 17th, 1885, S. W., age 44, married twenty years. General health good ; no cough. No Rh. F. P. 84. March 19th : Operating theatre, ether. Perinæum found to be torn through sphincter ani ; repaired in the way described. 23rd : Has had a good deal of pain about rectum ; requires morphia ; better this morning. 26th : Bowels opened freely this morning ; fluid ; no straining. 28th : All stitches removed. 30th : No pain ; to have purge to-night. 31st : Some bleeding when bowels acted. April 2nd : Bowels acted without pain this morning. 6th : Catamenia appeared. 7th : Feels better. Union good, but not a long perinæum. Full control over sphincter.

Case 3.—January 15th, 1886, M. D., age 25, married five years; three children. Last pregnancy eighteen months ago. Four years ago, after first delivery, the perinæum was ruptured, and was sutured immediately with good result. After second confinement, which was within a year of the first, the perinæum was again ruptured, and was

not treated. Since then the patient says the general bad effects have gradually increased. Bowels open regularly. Has no control over motions. On examination the perinæum is found lacerated through sphincter. Uterus bulky and hard; cervix lacerated. January 19th: Perinæum restored by the H incision. Sir Spencer Wells, who had previously seen me restore the perinæum by this method, was present, and brought Professor Nicolaisen with him. 29th: Perinæum appears to have healed well. February 15th: Perinæum firm; anus somewhat patulous, but patient has now perfect control over bowels.

Case 4.—September 27th, M. A. S., age 22, single; one child. Last pregnancy two years ago. Her first and only labour lasted fourteen hours. She was delivered by instruments. Was in bed three weeks afterwards; suffered much from weakness. Three months ago began to suffer from bearing-down pains and burning pain in back; no control over bowels; frequent desire to pass water; burning pain on micturition and occasional cloudiness of urine. She soon noticed that something "came down" through the vulvar orifice, and the abovementioned troubles all increased gradually. Perinæum lacerated through sphincter ani. October 8th: ether administered. Perinæorrhaphy performed by the flap-splitting. 17th: Sutures removed; perinæum has healed well. She has perfect control over the bowels.

Case 5.—October 18th, S. B., age 25, married fourteen years; two children. Last confinement three weeks ago. After first pregnancy, thirteen years ago, first noticed some prolapse of uterus; getting gradually worse; had no treatment till three months ago; wore a ring pessary, which caused considerable pain. Perinæum ruptured partly through sphincter. October 20th: Uterus totally prolapsed outside vulva. 21st: Operating theatre; ether. Perinæum repaired. 31st: Sutures removed. November 12th: Ring pessary inserted. Much relieved; uterus not inside pelvis.

Case 6.—Second operation, March 4th, 1887, N. H., age 32, married nine years; two children. One abortion. Last pregnancy three years. Patient was in the hospital a month ago, when Lawson Tait's operation was performed. She complains now of pain in back, hypogastric and pelvic region; worse when she lies on back or walks. Pain on since she was last in hospital, and constant desire. March 5th: Has now a very fair perinæum, the result of the last operation, but not sufficient. Lawson Tait's operation again performed on the basis of the last operation. 15th: Sutures removed; wound healed well. 23rd: There is now a substantial solid perinæum about an inch in thickness.

Case 7.—January 28th, 1887, age 25, married one and three-quarter years. Menstrual history: Regular; last period, fourteen days ago. One child. Last pregnancy nine months. Medical history: Since birth of child has had bearing-down pains and no control over bowels. Perinæum was repaired six weeks after confinement by Dr. Westland, who sent her to me. January 29th: On examination I found a fistulous opening leading from rectum through perinæum into vagina; perinæum had evidently been lacerated through sphincter, and a plastic operation performed; successful only in median portion. 31st: Operating theatre; ether. Perinæum repaired. February 4th: Period began. 7th: Period ceased. 9th: Sutures removed; union good.

Case 8.—January 17th, 1887, M. F., age 41, married nineteen years; five children. Last pregnancy six and a half years. Has been ill, "on and off," ever since last pregnancy. Patient complains of dragging pain and feeling of heaviness in back and left side. A little leucorrhœa. Dragging pain commences in back and abdomen, generally about twelve hours before menstrual flow commences, and lasts for the first two days of the period. Perinæum was ruptured eighteen years ago, in first labour, and has never been treated. Has perfect control over bowels, unless when they are relaxed, but they are usually very constipated. January 19th: On examination a rupture of the perinæum through sphincter was found to exist. 28th: Operation theatre; ether. Perinæum repaired; Lawson Tait's method. February 10th: Sutures removed; no control over bowels yet. 14th: Has now gained control over bowels. 17th: Perinæum has healed well. Patient feels much better.

Case 9.—February 27th, 1888, H. K., age 26, married one and a half years; one child. Abortion. Last pregnancy seven weeks. Was in labour thirty-three hours; forceps used. Child born dead; full term. Has been unable to retain her fæces since. The patient was sent to me for operation by Sir Spencer Wells. On examination a complete laceration of perinæum was found, the sphincter was torn through, and the laceration extended some three-quarters of an inch along posterior wall of vagina. February 28th: Period commenced. March 4th: Period quite ceased; normal in all respects; is unable to retain her fæces, which run away from her. 5th: ether. Perinæorrhaphy in the usual way, with the H incision; five sutures. 6th: No sickness after ether. Wound looking quite healthy. 7th: Patient doing well. No motions have escaped since operation; is unable to micturate. Catheter. 9th: Temperature rose again last night to 100·6°. Pulse 100°. Tongue furred; bowels have not acted. 10th:

Temperature did not rise last night above 99·2. Tongue clean. 12th: Patient doing well. Wound looks healthy. Tongue clean. Pulse and temperature normal. Bowels acting freely. 13th: Patient doing well. Wound healthy. Appetite good. 14th: Stitches removed. Wound quite healed. Mr. E. G. Peck, the Resident Medical Officer, examined the patient three months after the operation, and found it perfectly healed, with complete power over the sphincter.

Case 10.—Mrs. M., sent to me from India by Surgeon More Reid. Complete rupture through sphincter, extending half an inch up vagina. No control over bowels. Operation by flap-splitting. Result: a solid perinæum. I could give many more similar cases were it necessary.

In cases where the rupture is incomplete, the operation is indicated to prevent the occurrence of cystocele, rectocele, or prolapsus. These conditions are sure to supervene in the course of time, if the patient is left with an incomplete perinæum. One common condition is the existence of an irregularly-shaped cicatrix in the posterior vaginal wall. This is the cause of much pain, often on sitting, or during intercourse, and is frequently overlooked.

PERIOSTITIS.

Synopsis.—(Vol. 1888, p. 82.) **Tinct. Phytolacca**, gtt. v to x.

PERITONEUM (Tuberculosis of). *F. de Havilland Hall, M.D.*

Dr. Heintze divides cases of tuberculosis of the peritoneum into three groups: (1,) Those where there is a copious fluid effusion. These cases bear a considerable resemblance to cases of ascites from congestion. From this condition they are distinguishable by the very large amount of albumen contained in the fluid drawn off by tapping; (2,) The plastic form, producing a coating or tumour-like bodies. In these cases there is generally more pain than where there is much fluid effusion; there is a tendency also to the formation of kinks in the gut and bands leading to obstruction; (3,) The latent form, where there is neither any great amount of effusion nor much plastic exudation. Dr. Heintze points out the frequency with which tubercular disease of the peritoneum is associated with cirrhosis of the liver. Dr. Samuel Fenwick sums up the clinical characters of acute tubercular peritonitis by saying that they consist of more or less acute pain of the abdomen, increased by pressure, accompanied by elevation of temperature of an irregular kind, the evening temperature being usually much higher than that of the morning, by increased rapidity of the pulse, rapid loss of flesh and strength, thirst, loss of appetite, and continuous diarrhœa, or by diarrhœa alternating with constipation. The cases of acute tubercular peritonitis may be included in two groups. In one

the febrile symptoms are the more prominent, and those relating to the abdomen are comparatively slight; such cases closely simulate typhoid fever. In the other the abdominal symptoms are the most marked, and the fever is moderate; such cases resemble ordinary peritonitis.

Acute tubercular peritonitis may be distinguished from typhoid fever by its sudden onset, whilst typhoid is usually preceded by a period in which the patient has been weak, feeble and feverish. Pain in the abdomen is more marked, and there is tenderness over different parts of the abdomen in the former, whilst in typhoid it is rarely severe, and tenderness, if present, is confined to the iliac region. In tubercular peritonitis the temperature rises at once and not regularly as in enteric fever, and the pulse is usually more rapid. Later on the discovery of fluid in the peritoneum, or the detection of a tumour in the abdomen will facilitate the diagnosis; or signs of effusion in the pleura, or of consolidation in the apex of one or both lungs may be present.

The diagnosis of acute tubercular peritonitis from ordinary peritonitis is often a matter of great difficulty at the onset. As a rule the pain, tenderness and vomiting are less distressing in the tubercular form, the temperature is lower, and there is more usually diarrhœa than constipation.

TREATMENT.—In the typhoid form Dr. Fenwick treats the case as if it were one of enteric fever, and in the cases in which the symptoms are chiefly abdominal, he advises the same treatment as for ordinary peritonitis. Mr. O'Callaghan treats cases of tuberculous peritonitis by abdominal section and flushing out without drainage. He considers this disease a distinctly local form of degeneration, as met with in joints and other serous cavities; and that, if dealt with early in this manner, it will be perfectly cured. Certainly the success which has attended this procedure in the past warrants its employment in the future.

REFERENCES.—"Therap. Gaz.," June, 15, 1889; Fenwick, "Lancet," March 9, 1889; O'Callaghan, "Med. Press," April 10, 1889, p. 387.

PERITONITIS. *F. de Havilland Hall, M.D.*

Are Saline Purges or Opium to be used in the treatment of Peritonitis? It does not follow that because surgeons have obtained excellent results from ordering saline purgatives after operations implicating the peritoneum, that therefore saline purges should be given in cases of peritonitis. Physicians and surgeons deal with different stages and kinds of peritonitis. Surgeons, as it were, anticipate the onset of peritonitis after operations involving the peritoneum,

and in these cases they abort the threatened inflammation by giving large doses of saline purgatives. Now physicians are seldom, if ever, consulted before the symptoms of peritonitis are declared; and even if they were it would be almost impossible to make the differential diagnosis between idiopathic peritonitis and enteritis, and in the latter the administration of purgatives would certainly not be indicated. Therefore, in cases of peritonitis coming under the cognisance of the physician, and where an operation for the relief of obstruction is not required, the following treatment is best adapted to the requirements of the case. The patient should be kept absolutely at rest, and a liquid diet, meat juices to be preferred to a purely milk diet, should be prescribed and given in small quantities every two hours. A quarter of a grain of **Opium** and one-twelfth of a grain of extract of **Belladonna** should be given every two hours. Should this not suffice to check the pain, a grain of **Opium** may be given as a suppository twice, or at the outside, four times in the twenty-four hours. An injection of half a pint to a pint of **Warm Water** may be administered daily. The passage of flatus is a favourable sign. Having quieted the inflammatory action for two or three days the question of the advisability of an aperient will have to be considered, and the proper time at which to order it is a matter of no little judgment. Dr. Meigs recommends a pill consisting of a twelfth of a grain of extract of **Belladonna**, a quarter of a grain of extract of **Nux Vomica**, a quarter or an eighth of powdered **Aloes**, and a half or one grain of **Rhubarb**. This should be given at first once or twice in twenty-four hours, and if violent pain be set up—which, however, seldom happens—it should be stopped, and the opium and belladonna, every two hours, used for a day or two, when the attempt with the aperient may again be made. After a day or two the pill may be given every four hours until the bowels are relieved. Other mild aperients, like Garrod's **Compound Sulphur Lozenge**, or a mixture of equal parts of the confections of **Sulphur** and **Senna** may be tried.

Dr. Baldy, on the other hand, unhesitatingly condemns the use of opium in any of its forms. By keeping the bowels at rest it favours adhesions, it stops excretion and therefore leads to the retention of the poisonous products of inflammation and lures the physician into a false sense of security. He contrasts the use of salines in large and concentrated solutions. Here the bowels are put into active peristaltic action; this tends to prevent the formation of adhesions and bands; the cavity is drained of the products of inflammation; the inflamed surfaces are relieved of engorgement by a depletion of the intestinal vessels; the pulse and temperature speedily improve and the pain is

relieved as quickly as by the use of opium. He therefore lays down a general rule that where it can be shown that peritonitis is caused by an organic lesion, abdominal section is indicated; and that those other cases which refuse speedily to yield to purgative treatment should be immediately dealt with in the same manner.

REFERENCES.—Meigs, "Phil. Med. News," Dec. 8, 1888, p. 641; Baldy, "Ibid.," p. 645.

Surgical Aspect of Peritonitis. (See also "Abdominal Injuries," and "Vermiform Appendix.") *A. W. Mayo Robson, F.R.C.S.*

Experimental researches on the pathogeny of peritonitis have been made by Dr. Powlowsky, which go far to clear up many of the difficulties surrounding the subject. He planned a number of experiments to observe the effects of the action: (1,) Of chemical agents; (2,) Of microbes; (3,) Of the intestinal contents; and (4,) Of combined chemical agents and microbes upon the peritoneum.

One fact was clearly established, viz., that the infective forms of peritonitis were vastly favoured by the previous irritation of the membrane by chemical agents.

The peritonitis caused by chemical agents was invariably hæmorrhagic, never purulent, and there was an entire absence of microbes in the exudation, but when the *post mortem* was delayed beyond two hours after the death of the animal, microbes could be detected in the peritoneal fluids, showing that even before putrefaction had set in, these organisms could penetrate the dead, but not the living tissue.

As to the cause of the fatality of acute peritonitis, it is on this microbe doctrine, due to general infection. If the virus be of small amount, it is conceivable for it to be absorbed into the thoracic duct, carried away in the circulation, destroyed and excreted, as is the case with simple exudations; but if it be of greater amount or virulence, the microbes will be found accumulating around the stomata, which they soon occlude, and then, multiplying in the peritoneum, produce purulent effusion, besides increasing the danger of general sepsis. The practical inference from such considerations is that early laparotomy is indicated in infective peritonitis.

The surgical aspect of general peritonitis may be discussed under four headings: (1,) Traumatic; (2,) Perforative; (3,) Suppurative; and (4,) Tubercular. A local peritonitis always occurs when the peritoneum is divided and does not heal by first intention; but general peritonitis after injury, "apart from septic influences," is very rare. Septic peritonitis may be described as a combination of peritonitis, blood poisoning, and paralytic intestinal obstruction, the paralysis being due to inflammation of the coats of the bowel.

For detailed summary of the symptoms, diagnosis, and treatment of the different forms of peritonitis, with references, see the "Medical Annual" for 1889.

Dr. Steinthal, of Heidelberg, collected twenty-one cases of operation for perforative peritonitis, and tabulated the results; eight patients recovered; among these being three cases of diffuse suppurative peritonitis. The remaining cases were operated on too late, and in no case could the operation be blamed for the fatal termination. He dwells on the extreme importance of early diagnosis, and of fixing in advance the point of perforation. The diagnosis of peritonitis due to perforation is aided by the history (previous stomach symptoms, typhus ambulatorius, typhlitis), the sudden onset of the peritonitis, a collection of free gas in the peritoneal cavity (tympanites, diffuse sonorous percussion, with metallic *timbre*, absence of hepatic dulness). The following aid as to the seat of perforation: Absence of odour in the gas on opening the peritoneum, with comparatively slight septic properties, points to stomach perforation. The ileum and colon allow an odoriferous gas of rapid septic-acting qualities to escape. With the jejunum we have a slight escape of contents and gradual onset of symptoms (Czerny). On the other hand, a rapid disappearance of liver dulness and marked meteorism speak for perforation of the stomach. Added to this we also have circumscribed dulness and local tenderness. As to the technique of the operation, it is to be remarked: In slight circumscribed peritonitis due to perforation, incision, emptying of contents after manner of Schroeder and Escher, with closure of perforation by suture, should be resorted to. We should avoid too much manipulation. On failing to find the perforation, and in general peritonitis, the abdomen should be laid open by a liberal incision. In a perforation previously diagnosed, we may make an incision somewhat to the side, for the cæcum; and for the stomach and duodenum an incision in the linea alba from the umbilicus upwards. The peritoneum is next opened by a very small incision in order to decide the character of the escaping gas. The operation is further carried out in the manner familiar in intestinal surgery and laparotomy. Finally, the peritoneum is irrigated with ½% salicylic acid solution until the fluid returns clear, and the loops of intestine most strongly infected are sponged with 0·5% sublimate solution. Gersung's iodoform wick is recommended for drainage.

Mr. Vincent Jackson, in the "Brit. Med. Jour." for June 29, 1889, p. 1465, reported a case of recovery after laparotomy for acute suppurative peritonitis in a young man. The abdomen was flushed out with warm water and drained.

In the "Lancet," vol. ii., 1889, p. 219, will be found the record of a case of abdominal section for perforation in typhoid fever.

At the German Surgical Congress a most valuable paper was read by Dr. Mikulicz on the subject of the operative treatment of perforative peritonitis. He divides the cases into two classes: (1,) Diffuse septic peritonitis, in which laparotomy, with suture of the perforation and disinfection of the peritoneum, appears entirely rational; (2,) Progressive fibro-purulent peritonitis, in which he suggests that each intra-peritoneal focus of exudation must be opened separately, and not the peritoneal cavity in its whole extent. Cases were given in support of his views, and an interesting discussion followed, in which Kœnig, Rosenberger, Wagner, and others took part.

Tubercular Peritonitis.—From twenty-five fatal cases of tubercle in which the peritoneum was either primarily affected, or in which it had been affected for a long period, Dr. Heintze deduces some interesting facts. All the cases occurred in the Breslau clinic, and necropsies were made in every instance, so that there was no doubt about the diagnosis.

Dr. Heintze concludes that as to operative measures, the only good that can usually be done is to empty the peritoneal cavity, so as to free the vessels from the pressure of the ascitic fluid; paracentesis only accomplishes this imperfectly. In the plastic form, operative measures are, as a rule, useless, it being impossible to remove all the diseased matter as can be done in tubercular disease of bones or joints; still there are circumstances under which an operation may be imperatively called for, as, for example, where ileus is produced by the formation of constricting bands. Dr. Heintze does not think any advantage is to be expected from opening the abdomen and dusting the viscera with iodoform.

Dr. F. Spaeth (Hamburg), terminates a paper in the "Deut. Med. Woch." Nov. 20, 1889, on four cases of laparotomy for tubercular peritonitis, with the following conclusions: (1,) In primary tuberculosis of the peritoneum without implication of other organs, laparotomy may act as a curative agent, and is to be recommended; (2,) In tuberculosis of the peritoneum where the female genitals are involved in the process, operative treatment has not given any satisfactory results; (3,) In tuberculosis of the peritoneum due to a tubercular enteritis, operative treatment is only palliative; (4,) In genital tuberculosis, unaccompanied by peritoneal tuberculosis, early radical operation is to be urged; (5,) Primary tubercular peritonitis is a much rarer form of disease than has heretofore been thought.

The author has operated on five cases of tubercular peritonitis,

recovery having ensued in all the cases: in one, complete cure apparently resulted, the patient gaining two stones in weight within six months of the operation.

"Laparotomy in Chronic Peritonitis" is the title of a paper by Dr. Prochownick (Hamburg), in the "Deut. Med. Woch." No. 24, 1889. He argues that many abdominal symptoms owe their origin to peritoneal adhesions the result of chronic peritonitis, and that cure may be effected by loosening the adhesions, avoiding strong antiseptics, performing strict toilet of the peritoneum, and not giving opium after operation.

REFERENCES.—"Virchow's Archives," Band, 117, Heft 3, 1889; "Lancet," p. 604, vol. ii., 1889; "Ann. of Surg.," p. 59, vol. i., 1889; "Cent. für Chir.," No. 29, 1889; "Ann. of Surg.," vol. ii., p. 289, and 292; "Ann. of Surg.," p. 295, vol. ii., 1889; Hartley, "Brit. Med. Jour.," p. 136, vol. i., 1889; O'Callaghan, "Lancet," p. 792, vol. i., 1889; Fenwick, "Lancet," p. 411, vol. i., 1889.

Synopsis.—(Vol. 1889, p. 377.) ℞ Magnes. Sulph., Sod. Sulph., āā ʒ·s; Tinc. Belladon., ɱx, 4tus hor., after Belladonna and Opium failed, proved successful. **Salines** used early when vomiting and abdominal distension follows operations. **Codeia** or **Belladonna** as sedatives, but if these fail irrigation and drainage may have to be resorted to. In perforative forms with pulseless and collapsed condition, inject **Atropine** and **Morphia**, and irrigate with hot **Boracic Lotion** and drain as soon as the operation can be borne.

PERITYPHLITIS. (See "Typhlitis.")

PERTUSSIS. *Henry Dwight Chapin, M.D., New York.*

Dr. R. Guaita, medical director of the Children's Hospital, at Milan, confirms the value which has been attributed to **Antipyrin** as a remedy in whooping-cough. During an epidemic at Milan, last summer, he used it in twenty-two cases, twelve of which were of great severity, with the result that in every instance the disease was completely cured in from four to five weeks. No complication of any kind occurred. The age of the patients varied from five months to nine years, with the exception of one who was over twenty. In all the cases, the symptoms subsided or became more marked, according as antipyrin was given or withheld. Dr. Guaita thinks that the good effect of the drug is due partly to its inhibitory action on the nervous system, and partly to its antiseptic properties; he calls it the "sovereign remedy, for the present at least, in whooping-cough."

The dose given is 25 centigrammes of antipyrin in 25 grammes of syrup of orange peel, with an equal quantity of distilled water, in four doses in twenty-four hours, increasing the dose of antipyrin to 1 or 1½ gramme according to the indications.

In a recent number of the "Archiv für Kinderheilkunde," as quoted in Schmidt's Jahrbücher, Dr. A. Beltz, of Griefswald, reports the results he has obtained by means of Michael's method. This method consists in insufflations into the nasal cavity of 1 part of **Nitrate of Silver** to 10 parts of magnesia. Dr. Beltz asserts that this treatment has given him very good results. In some patients the disease is quickly aborted ; in others there is said to be a diminution in the intensity and in the duration of the attacks ; in only a few cases there are no noteworthy results obtained. The insufflations were employed in some cases every second day, and in others daily. The results were most favourable when the patients were subjected to the treatment at the beginning of the disease, or after it had lasted not more than six weeks.

This method would seem to be very harsh for adoption in general cases.

Dr. T. Williams ("Medical World," Sept., 1889), advises the following substitute for "Roche's embrocation" :—

℞ Ol. Olivæ	oz. iv	Ol. Caryoph. q. s. to strongly scent.	
Ol. Succin.	oz. ij	M.	

From ♏15 to dr. ij. to be rubbed in well, according to age of patient ; the full dose being for an adult in a day.

In the "Münch. Med. Woch.," for March 19th, 1889, Dr. R. Heimann reports good results with **Phenacetin** in the treatment of pertussis. The paroxysms of coughing which, before its administration numbered from ten to fifteen, were reduced to three after the drug had been taken, and after several days they disappeared altogether, returning only at night, the drug being then withheld. The doses were as follows: To a three-year-old boy, 6 grains in four doses of 1½ grains each ; to a two-year-old girl, 4½ grains in three doses ; and to a nursling, 3 grains in four doses of ¾ grain each. A grain and a half of the drug sufficed to keep the paroxysms in check for three hours. If the drug was omitted for a day, the paroxysms returned in number and severity.

Fervers ("Jahrb. f. Kinderh." xxviii. 2) advises treating pertussis by **Quinine.** All the recent investigations as to the nature of the disease have succeeded in showing only that it is an infectious disease, and that it is caused by pathogenic organisms. The treatment by quinine was begun in 1868. Its beneficial effect is due, according to some, to its tendency to diminish the reflex excitability of the spinal cord, while others consider that it is efficient only on account of its antizymotic properties. Often it is given in too small doses, for children can bear relatively larger doses than adults. It may not be

given for a sufficiently long time to test its merits. The more quickly it is absorbed, the better will be the results. The author has found the tannate a very useful preparation. Theoretically, subcutaneous injections must form the most favourable method for using the drug, if a combination were at hand which would admit of ready absorption. Such a combination seems to be furnished by the carbonide of quinine, which is a crystalline combination of the acid muriate of quinine with chemically pure urea, and is soluble in an equal portion of water. With suitable care the danger of abscess or necrosis of the skin by this method is not great.

Synopsis.—(Vol. 1888, p. 398.) **Antipyrin**, gr. vijss to xv to adults and older children, gr. ¼ to ⅙ to very young children; **Quinine** and **Alum** in declining stages; **Peroxide of Hydrogen**, *e.g.*, Ⅱ Hydrogen Peroxide (10 vols. strength), ℥vj; **Glycerine** Pur. ℥iv; Aq. Destill. ad ℥iij. M. Sig. ℥ss five or six times daily; **Oxymel of Squill**; **Sulphurous Acid** fumigation; Ointment of **Eucalyptol** and **Iodoform**, āā ℥ss, **Vaselini**, ℥j, applied to nasal mucous membrane; Lotions of **Hyd. Perchlor.** or **Boroglyceride** may be used similarly. **Ambrosia** (p. 11); **Pyridin** (p. 85).

(Vol. 1889, p. 381.) **Antipyrin**, grs. j to iij t.d. in very young children, raising dose to grs. xv in adults and older children. Insufflation with equal parts **Boric Acid** and **Roasted Coffee**, or **Muriate of Quinine**, iij parts, **Gum Arabic**, j part, finely powdered **Boric Acid**, grs. ij to iij ℥tis hor. during the day and once during the night. **Hyoscin**, gr. $\frac{1}{300}$ to $\frac{1}{100}$ hypodermically (p. 45).

PHARYNGITIS (Chronic). *P. Watson Williams, M.B.*

Mr. Millican reports that he has obtained excellent results in cases of chronic pharyngeal and laryngeal catarrh from the internal administration of **Bichromate of Potash.** "The most universal characteristic, however, which seems to indicate it especially is congestion, whether of pharynx or larynx, where the capillaries are brightly injected. When this injection of capillaries is a marked feature in chronic complaints, and even sometimes in acute troubles, it seems to act with marvellous certainty so far as he has yet been able to try it." Dr. B. W. Richardson has called special attention to its action in the nasal mucous membrane, and in Dr. Lauder Brunton's book it is mentioned for internal administration. He uses a solution of the same strength as his liq. strychniæ (1 gr. in 2 oz.); dose, 3 to 10 minims. We have used this drug in several cases of chronic pharyngitis and are able to confirm Mr. Millican's experience. We would, however, urge the greatest caution in its use as larger doses than those indicated may set up an acute inflammation of the fauces and pharynx.

In early stages of granular pharyngitis good results were obtained with tincture of **Æsculus Hippocastanum**, the common horse chestnut; dose, ♏iij., every three or four hours.

The following report of a case of a music hall singer who was treated with this drug is extracted from Mr. Millican's paper :—"She complained of a sensation as though her throat had been scraped out with sand-paper; there was dryness and smarting of the fauces, and an intolerable itching of the soft palate. The dryness of the throat gave rise to an irritable hacking cough. On examination the fauces and pharynx were dusky in colour and dry, and the follicles were prominent. The vocal chords showed merely the results of an old catarrh, viz., a muddy hue and that sluggishness of movement which is generally the result of a long-standing catarrh, and consequent partly, at any rate, upon lymph deposit in the sub-mucous tissue. This appeared to me to be a typical case for the use of æsculus, and I accordingly gave her 3 minims of the tincture in a little water every three hours. I applied no local treatment to the fauces, not wishing to complicate the result, but I painted the vocal cords twice with a solution of **Chloride of Zinc**, in view of their special condition. On January 27, seven days afterwards, she was in every way improved, although she had not discontinued singing. The throat was more natural in colour and moisture; the follicles were less prominent, and the troublesome irritation of the rectum was fast disappearing. By February 3 the symptoms had entirely disappeared, the cough, the roughness and dryness of the throat, and the rectal trouble as well."

REFERENCE.—Millican, "Jour. of Laryng," May, 1889.

PHARYNGITIS AND PHARYNGEAL CATARRH.

Synopsis.—(Vol. 1888.) **Æsculus Hippocastanum** (p. 9); **Hamamelis** (p. 58); **Hydrastis** (p. 61); **Iodol** (p. 68); **Phytolacca** (p. 82); **Phosphate of Sodium** (p. 92).

(Vol. 1889, p. 383.) Application of 20 to 30% solution of **Lactic Acid** in dry pharyngitis. Application of **Crude Pyroligneous Vinegar** in chronic hypertrophic pharyngitis. In acute tonsillitis, 5 to 10% solution of **Cocaine** relieves; a purge is given followed by **Sod. Salicylate**, and application of **Ice-bag** or **Leiter's Cold Coil**. If suppuration is inevitable **Calcium Sulphide**, gr. $\frac{1}{10}$ to $\frac{1}{6}$ every 3 or 4 hours and poulticing assist speedy maturation. **Menthol**, 5 to 20% solution in acute pharyngitis; 25% solution in chronic cases (p. 53). ℞ Iodine, gr. vj, Pot. Iodid., gr. xx, Aq. ℥iij, Menthol, ℥jss, Glycerine, ℥vj, M. Application in chronic pharyngitis (p. 53).

PHTHISIS. *R. Shingleton Smith, M.D.*

The new methods of treatment are all based on the now generally admitted fact that the tubercle bacillus is the one leading factor in the production of the disease, that all the varieties of inflammatory mischief in the lungs without the bacillus are not phthisis, but that wherever the bacillus is, there we have tuberculous disease. The diagnostic value of the presence or absence of bacilli from the sputum becomes more and more apparent, and the newer methods of

treatment are all based upon the germicide powers of the drugs employed.

The question of contagion has passed beyond the stage of probability: the *materies morbi* having been proved to be a *contagium vivum*, can we any longer refuse to admit that the disease is disseminated by means of particulate germs such as are believed to exist in all contagious diseases?

Contagion, limited and modified by various adventitious surroundings, is admitted for diphtheria, typhoid fever, syphilis, and leprosy; the same limitation applies to the dissemination and propagation of phthisis, but the existence of these limitations must not lead us to deny the existence of what is clearly the most essential feature in the etiology of phthisis.

A writer in a recent number of the "Medical Chronicle" remarks that "Disinfection, or, in other words, the destruction of the *contagium vivum*, is the most effective means of combating the infectious diseases. The shortcomings of this means of treatment do not spring from a want of methods, but from our deficient knowledge of the exact nature of the contagia in the different diseases, and because we do not yet know how those contagia are affected by the various physical and chemical agents proposed for their destruction." Even methods which, from experiments in the laboratory, appear to be perfect, fail when adopted in practice. The same means which will be effectual with one kind of contagium will be inert in another. A recent publication advocates the **Biniodide of Mercury** in doses of $\frac{1}{16}$, $\frac{1}{8}$, or $\frac{1}{4}$ grain three times a day, and the author has no doubt as to its efficacy in the ordinary specific fevers.

Dr. John E. Weeks, from experiments in the New York Ophthalmic and Aural Institute based upon the action of germicides on the staphylococcus pyogenes aureus and the typhoid bacillus, arranges the most effective germicides in the following order: Bichloride of mercury, chloride of lime (fresh), chlorinated soda (fresh), chlorine water (saturated), nitrate of silver, salicylic acid, creasote from beechwood (Muck), alcohol (chlorate), carbolic acid, sanitas oil No. 1, "sanitas" crude, potass. permanganate, bisulphate of mercury, "sanitas" disinfecting fluid, creolin, trichlor phenol (in ether), hydrogen dioxide, aseptol, listerine, ol. eucalypt. globulus, iodoform and ether, balsam of Peru, oil of thyme, chloride of iron, iodide of silver, napthalin in ether, oxynaphthoic acid, ichthyol, oil of cade, biniodide of mercury, oxycyanide of mercury, yellow oxide of mercury, red oxide of mercury, bromide of mercury, resorcin, beta naphthol, potass. hydrate, thallin, terebine, iodoform. He adds: "Our list of effective

germicidal remedies is relatively large, and is, I think, sufficiently complete."

Many of these *effective germicides* have recently been tested in cases of phthisis, but mostly with an unsatisfactory result. **Hydrofluoric Acid** has been employed by Hérard, Lépine, Paliard, and others. **Tannin** has been well reported on by Caccherelli ("Etudes sur la Tub.," Tome ii. Paris, 1888), **Sulphate of Copper** by Luton, and various other drugs by Cornet at the Berlin Hygienic Institute.

Clinically the drug which has given the most satisfactory result is **Creasote,** crude or, in its purified form, **Guaiacol.**

Creasote has had a considerable reputation in the treatment of lung diseases; but it is only recently that it has begun to take its place as an efficient germicide in phthisis. The publication of the results obtained by Gimbert and Bouckhardt of ten years ago, and of Sommerbrodt in 1887, has given an impetus in this direction, as tending to show that the value of the drug is in direct proportion to the size of the dose, and that large doses will succeed where small ones have failed, as was the case with Bogdanovitch, who took five grains four times daily in capsules after food with great benefit, whereas he had previously found that small doses were useless. It is readily taken in combination with bitter tinctures and glycerine or cod liver oil.

The nauseous taste and irritating properties of creasote have led to the substitution for it of the substance **Guaiacol,** a colourless liquid, having the composition of catechol monomethyl ether, $C_6H_4\begin{cases}OH\\OCH_3,\end{cases}$ and contained in beechwood creasote to the amount of 60 to 90 per cent. Sahli of Berne was led to prefer it to creasote because of its more definite composition, and less unpleasant odour and taste. He prescribed it thus :—

℞	Guaiacol puriss	♏ 15 to 30		Sp. Vini Rect.	℥vj
	Aq. dest.	℥vj			

A teaspoonful to a tablespoonful, two or three times a day, after food, in some water.

Frœntzel considers it the active constituent of creasote, and strongly advocates the following formula :—

℞	Guaiacol	℥iijss		Sp. Vini Rect.	℥viij
	Tr. Gentian Co.	℥j		Vini Xerici. q.s. ad	Oj

One tablespoonful, two or three times daily, in a wineglassful of water.

Berlin physicians have given these drugs in gelatinous capsules, and the French physicians have administered them in the well-known "pearls" of creasote and iodoform of Dr. Clertan, in which the more active drugs

are dissolved in ether, with the object of facilitating the absorption, diffusion, and transport of the drugs to the lungs, by which route they may be eliminated. In this way creasote can be administered for long periods without inconvenience: Sommerbrodt's patients continued it for several months, and some patients had taken six to twelve hundred capsules without interruption.

Creasote has been well spoken of by Dr. Austin Flint, and by Dr. Beverley Robinson who is convinced that "we have in **Beechwood Creasote** a remedy of great value in the treatment of phthisis. Not only does it lessen or cure cough, diminish, favourably change, and occasionally stop sputa, and relieve dyspnœa in very many instances, it also often increases appetite, promotes nutrition, and arrests night sweats. It does not occasion hæmoptysis, and rarely causes disturbance of the stomach or bowels, except in cases in which it is given in too large doses."

Aniline has been largely used by Kremianski, whose treatment of phthisis by inhalation of aniline and the internal use of aniline and **Acetanilide** is now well known. Latterly he has found great advantage from combining **Iron** with his usual antiseptic treatment, seeing that it minimises the tendency to the blue colouration so often noticed in patients who are taking aniline or antifebrine; besides, it has of course an admirable effect on the anæmic condition which is common to most phthisical patients. He also sometimes employs an ointment for rubbing in under the clavicles, consisting of aniline boracic acid, and oil of pepperment, an ounce of each of these ingredients being combined with eight ounces of white vaseline. In some of the cases the bacilli seemed to have disappeared, while in others their numbers had decreased to an enormous extent. It must not be forgotten that a very important part of the treatment consists in giving the patient considerable quantities of a specially prepared meat powder devised by Professor Kremianski, a notice of which appeared in the "Lancet" of Oct. 27, 1888.

Eichhorst believes in **Myrtol** as a disinfectant of the air-passages. After only one gelatine capsule the breath smells of myrtol within an hour, and the effect lasts from twenty-four to forty-eight hours; but, in order to subdue putrid processes, two capsules (each containing ·15 gramme) were usually given every two hours. The appetite improves under its use, and the expectoration and breath lose all offensive odour with remarkable quickness. Four cases are mentioned by Professor Eichhorst as showing the beneficial action of myrtol in a striking degree, but one of the cases showed that it possesses no specific action against the tubercle-bacillus. The expectoration diminishes under its

use ; the appetite, as before remarked, improves, and the patients feel better generally.

Dr. C. Theodore Williams reports the results of an enquiry on the action of *phenyl-propionic* and *phenyl-acetic acids* as follows : (1,) **Phenyl-Propionic** and **Phenyl-Acetic Acid** promote appetite, digestion, and assimilation in phthisis, and thus cause gain of weight ; (2,) They are well tolerated in considerable doses by patients for long periods of time ; (3,) Their influence on the lungs is less marked than their constitutional influence, but phenyl-acetic acid acts more beneficially on the lungs than phenyl-propionic acid, and appears to reduce cough and expectoration ; (4,) The use of phenyl-acetic acid appears to be more indicated in cases of tuberculisation, and that of phenyl-propionic acid in excavation cases, but a larger number of observations are required to speak with certainty on this point.

The immunity of limekiln workers from consumption has been pointed out by Dr. Halter ("New York Med. Jour.," Jan. 12, 1889), and has been made the basis of *the hot air cure of phthisis.* In a country district, which otherwise showed a large number of deaths from consumption, the workers in limekilns had, without exception, been exempt from phthisis during fifteen years. This is believed by Dr. Halter to be due to the hot dry air which they constantly breathe, the temperature in which they work being 122° to 156° Fahr.

The most favourable temperature for the tubercle-bacilli is from 98·6° to 100·4° Fahr. : they die at 105·8°. Halter believes that the inspired air may be warmed sufficiently to prevent the growth of bacilli in the lungs. An apparatus for heating the inspired air has been devised by Weigert, and has given results which were considered to be satisfactory.

Inhalation Treatment.—In a very complete paper on this subject Dr. Theodore Williams related the results of a series of observations, carried out at the Brompton Hospital for Consumption, to determine the activity and effect of the different forms of inhalation in common use. The following are his practical conclusions : (1,) The success of inhalations as a mode of medication depends principally on the easy convertibility into gas or vapour of such substances as are clearly desirable for the purpose ; (2,) Bodies which are volatilized at ordinary temperatures, such as ether and nitrite of amyl are more readily absorbed by the lungs than bodies which have to undergo combustion before conversion into gases—the products of fuming powders, papers, and cigarettes. (3,) All moist inhalations, where steam, watery vapour, or spray is the vehicle of medication, are but slowly absorbed by the lungs, and enter the circulation in small quantities—in some cases not

at all, the slow rate of pulmonary absorption contrasting strongly with the rapidity of gastric absorption of the same medicines when swallowed, as proved by their detection in the urine. Iodine is a striking instance of this; (4,) Medicinal inhalations are more useful in diseased conditions of the pharynx, larynx, and larger bronchi than in those of the alveoli and lung parenchyma, which do not readily absorb, if indeed they are freely reached by these applications; (5,) In pulmonary disease the "antiseptic respirators," while they lessen cough and reduce expectoration, exercise no lasting remedial influence on the diseased conditions of the lungs, and often seriously interfere with the freedom of respiratory effort, which is an essential condition of success in the treatment of these affections. They are vastly inferior to counter-irritation of the chest-walls with cantharides, iodine, or mustard.

The inhalation of diluted **Hydrofluoric Acid,** first advocated by Bergeron, has recently been tested on rabbits by Grancher and Chautard, of Paris, who found that inoculated rabbits died at the same time, whether treated in this way or not ("Thérap. Gaz.," July, 1888.)

The pulverizations of **Biniodide of Mercury** employed by Miquel and Rueff appear to have been useful. They publish a series of twenty-seven cases, and claim for the treatment the following general effects: Increase of appetite and weight; diminution or disappearance of the pyrexia, night-sweats, and expectoration. In five cases where the bacilli had disappeared from the sputum the pulverizations had been continued uninterruptedly for eight to ten months.

Creasote Inhalations have been well spoken of by Drs. Austin Flint and Beverley Robinson. In a very large proportion of cases of pulmonary phthisis that have been treated during the last year or two, whilst creasote was taken internally, antiseptic inhalations were also used by means of the perforated zinc inhaler. As a rule, in the beginning, the inhaler was worn during fifteen or twenty minutes every three hours, and from ten to twenty drops of the inhaling fluid were poured on the sponge of the inhaler at least three times in twenty-four hours. The inhaling fluids most frequently employed were: (1,) A combination of **Iodoform, Creasote, Eucalyptus, Chloroform, Alcohol,** and **Ether,** seemingly a somewhat formidable mixture in view of its numerous constituents, but a very rational one when explained in detail; (2,) **Iodine, Creasote, Carbolic Acid,** and **Alcohol;** (3,) **Creasote** and **Alcohol.**

The first one of these inhalants is a modification of one taken from Lauder Brunton; the second is that of Dr. Coghill, and, according to Dr. Douglas Powell, "is a favourite and much used one"; the third

is Dr. Beverley Robinson's own combination. The following are the precise formulæ :—

℞. Iodoformi	gr. xxiv	Chloroformi	♏xlviij
Creasoti	♏iv	Alcoholis, Ætheris	āā q. s. ℥ss.
Ol. Eucalypti	♏viij	M.	
℞. Tinct. Iodi Ætherealis, Acidi Carbolici	āā ℥ij	Creasoti Sp. Vini Rect. M.	℥j. ad ℥j.
℞. Creasoti	℥j	Alcoholis M.	ad ℥ss.

Subcutaneous Injections.—**Carbolic Acid** was used by Dieulafoy and Dujardin-Beaumetz, Lefaivre, Filleau, and Leon Petit, but **Eucalyptol, Iodoform, Iodine, Arsenic,** and **Salicylic Acid** have also been employed in this way. One of the best diluents for the purpose of hypodermic injection was that suggested by Meunier, of Lyons—*Liquid Vaseline.*

All the various methods of treatment by hypodermic injection are obviously only modifications of general medication, the drug being introduced into the cellular tissue of any part of the body, commonly a healthy part, in order that it may reach the blood and be carried in the blood-stream to the part diseased. It follows that, to be of service, the drug must be introduced in sufficient quantity, that the whole mass of blood in the body may have such a percentage as is likely to modify the germ development in the part affected ; and the question naturally presents itself, whether it is possible to introduce, either by stomach or by cellular tissue, a sufficient quantity of any potent germicide to influence a diseased focus, without at the same time so poisoning the whole mass of blood as to more than counteract any possible benefit to be obtained. It may be possible to accomplish the end in view, but it is clear that the various methods of hypodermic injection now in use are altogether futile, inasmuch as the quantities introduced are entirely inadequate when distributed throughout the whole mass of the body.

Dr. Schetelig has been employing twenty to thirty per cent. solutions of **Creasote** in pure *Oil of Cloves*, injecting 16 minims into the subcutaneous tissue of the thigh or abdomen, and then removing the syringe from the cannula, employing gentle massage over the seat of injection, and then again injecting new amounts in the same locality. In this way he finds that he has been able to inject from four to twelve syringefuls of 16 minims without the patient experiencing any pain, or, in fact, any disagreeable consequences. He writes that he has employed this method of treatment for four months, and claims that his experience warrants the following conclusions : (1,) As regards harmlessness of

large doses of creasote, when injected subcutaneously, giving from 16 to 25 minims daily for months at a time, and sometimes giving from 30 to 45 minims at one treatment, without noticing any accumulative action; (2,) In fourteen cases the taste of creasote was noticed in the mouth of the patient, quite independent of the quantity injected. The intervals between the injections varied from fifteen minutes to one hour, and in no case was there any disturbance of digestion complained of; (3,) Subcutaneous injections of creasote exert a marked antipyretic action. When a small quantity of creasote is introduced under the skin of the feverish phthisical patient, the temperature is reduced from two to three degrees, or more. Ordinarily, 16 to 25 minims is sufficient, although excessively febrile temperature requires a larger dose; (4,) The author adds that **Guaiacol** injected subcutaneously possesses all the properties of creasote, although only one-third or one-fourth of the quantity of the former is required.

Intra-pulmonary Injections.—Failing the further and more satisfactory development of the hypodermic method, numerous attempts have been made to accomplish by local parenchymatous intra-pulmonary injections a more active and effectual attack on one or more diseased foci. Such injections have been frequently performed by Drs. Pepper, of Philadelphia; Beverley Robinson and White, of New York; Ransom, of Manchester, and many others. One of the most remarkable series of these is that of Professor Riva, of Pavia, who endeavoured to inundate the parenchyma of the lung so thoroughly with the fluid as to destroy all the bacilli present; as much as 40 to 50 c.c. of a 1 to 3,000 solution of **Mercurial Bichloride** was injected at one time, and in upwards of one hundred injections no accident occurred. The number of bacilli in the sputum notably diminished, but in no case did they entirely disappear. Our own experience at the Bristol Royal Infirmary is now considerable. The first series of cases was published in the "Brit. Med. Jour.," Oct., 1886, and since that time injections have been frequently performed, although with only partial success. Various solutions of **Iodoform, Iodol, Creasote,** in *Eucalyptus Oil*, in *Vaseline*, or in the *Camphor Carbolate*, have been employed, but more recently the **Biniodide of Mercury** has been preferred.

Symptomatic Treatment.—Temperature.—**Phenacetin** in 5 gr. doses has proved itself to be the most reliable and safest antipyretic.

Night-sweats.—**Atropine** in doses of gr. $\frac{1}{120}$ to $\frac{1}{60}$ rarely fails, but has the inconvenience of causing some dryness of throat.

Cough.—The only recent addition to the list of cough remedies is the syrup **Apomorphinæ Hydrochlorate,** containing gr. $\frac{1}{32}$ to each drachm.

This syrup, either alone or in combination with ipecacuanha or squills, forms a most efficient expectorant by promoting bronchial secretion. It may be given in combination with hydrobromic acid, chloroform, paregoric, and other sedative preparations, and rarely fails to give relief.

Hæmoptysis.—**Hamamelis** and **Hydrastis** have recently been advocated ("Therap. Gaz.," Feb., 1889). **Iodoform** has been credited with a magical power of arresting hæmorrhage ("Le Prog. Méd.," May 19, 1888).

Diarrhœa.—Intestinal antiseptics have been found to check the tendency to diarrhœa. β. **Naphthol, Betol, Hydra-Naphthol,** and **Sozo-iodol** have given results which justify further investigation.

Climatic Treatment.—Dr. H. D. Niles believes: (1,) The importance of local treatment has been under-estimated in the past; (2,) Preventive treatment has not received the attention it deserves; (3,) In the general treatment too much reliance has been placed on drugs.

The requisites of a climate for pulmonary invalids are: Altitude (three thousand five hundred to six thousand feet); dryness (greatest possible); equability; greatest number of sunshiny days; greatest possible freedom from sand and wind storms; comparative coolness.

Dr. Isaac Hull Platt, of Lakewood, N.J., sums up the question of climatic treatment, and divides cases of phthisis into three general classes: (1,) Those who are merely threatened with the disease or, having developed some slight signs, do not suffer from much constitutional disturbance, pyæmia, or loss of strength and appetite; (2,) Those in whom the disease is more advanced, who have become to some degree emaciated and debilitated, who may be suffering from pyrexia or anorexia, in short, who are actually ill, and yet not beyond the hope that climatic change with judicious treatment will result in alleviation or arrest of the disease; (3,) Those cases where advanced destructive changes in the lungs, combined with evidences of rapid progress of the disease, show them to be hopeless, and render it improbable that change of climate will do sufficient in the way of alleviation to recompense them for the loss of home comforts.

The first-class consists of those cases of which I have spoken as most suitable for high altitudes and an out-door life. They should receive instructions to spend their time as much as possible in the open-air and to take exercise suited to their strength, the best form of which, for those who are strong enough to endure it, is undoubtedly, mountain-climbing, from its action in expanding the lungs. In these cases, as in all others, the place selected should be one where there is no stint of good, wholesome food. Beyond attention to these points

this class of cases should not need much treatment, but they should be instructed to seek medical advice upon the first appearance of any new development.

Of the third-class of cases, those with advanced disease, it is unnecessary to say anything, as they are not proper subjects for climatic treatment. The intermediate class is the one requiring the most careful and judicious management. If it is decided to send a patient of this class away from home, it is essential in the choice of a place to consider not only the suitability of the climate to the patient's condition, but the character of his proposed surroundings with regard to comfort. He should, of course, have as good, wholesome, and appetizing food as possible ; his sleeping apartment should be large and airy, should receive plenty of sunlight, and should be furnished with an open fireplace. The appointments and surroundings of the house which is to be his temporary home should be as cheerful and pleasant as possible, and should be furnished with spacious, sunny verandas. These seem like truisms, but they are none the less important, and none the less neglected. Good drives and good living are essential for patients who are not strong enough for much tramping, and are desirable for those who are.

No place, however desirable in other respects, is suitable for these patients unless supplied with a reliable physician ; one to whom the home physician feels that he can confide the care of his patient ; for it seems sufficiently evident that a person suffering from a serious chronic disease should not be at a distance from good medical attendance. He should be instructed to report to the local physician upon his arrival, even if in no immediate need of treatment, in order that the latter may become acquainted with his history and general condition.

The general management of patients at health resorts does not differ materially from the home treatment, except so far as it involves the use to their best advantage of the increased facilities. The main points to be observed are to obtain the greatest amount of fresh air, the fullest lung expansion, and the best possible nutrition. Means to the attainment of these ends, together with the treatment of symptoms as they arise, is the writer's idea of the proper management of phthisis. With regard to fresh air, the problem is the one already mentioned, to induce patients to remain in the open-air without tiring themselves by over-exertion. It takes some little time to make people believe that they can sit in the open-air in cold weather without taking cold, but when they once try it, properly protected from wind and cold, they are usually so much pleased with the result as to

require no further urging. Dr. Hull Platt is in the habit of keeping his phthisical patients out of doors as many hours of the day as possible, of having them sleep with open windows, and instructing them to allow the windows of their chambers or living rooms to remain open whenever they are not occupied, to allow of thorough ventilation. This is the nearest approach to an out-door-life that he has been able to bring about, and he has been well pleased with the results; but a plan by which a continual out-door life can be led, without too much exposure, is undoubtedly a *desideratum*.

Lung expansion can be best accomplished in those cases where the patients are strong enough for mountain-climbing and other forms of active exercise, but unfortunately, few of our patients are capable of the exertion, and then our last expedient is to fall back upon passive expansion by means of the pneumatic cabinet, or what he regards as equally efficacious, and prefers upon the score of simplicity and cheapness, Dr. S. Solis-Cohen's modified Waldenburg compressed air apparatus. This apparatus he has combined with a slight modification of Semple's atomizing inhaler, by means of which an exceedingly fine nebulized fluid is suspended in the compressed air and inhaled with it. In this manner he believes that a fluid can be carried farther into the air passages than by any other of which he knows.

To accomplish the best possible nutrition of our patients is undoubtedly the most important indication of treatment, but one of the most difficult to fulfil. Of course, the first thing to be attended to is to see that the table fare is good, wholesome, nutritious, and appetizing. If insufficient nutrition is accomplished by this means, it must be supplemented by milk or milk and beef powder, or one of the reliable preparations of beef peptonoids, taken between meals. If this cannot be persisted in, owing to gastric catarrh or indigestion, resort should be had to gavage, practised twice or thrice daily, and when there is much gastric catarrh lavage once a day. Lavage and gavage undoubtedly form our most powerful means of increasing nutrition, and a case seldom occurs where they are not well borne and the results well marked. In any case of forced nutrition, however, it is necessary to give the digestive organs a few days' rest occasionally when they show signs of fatigue. In regard to gavage, he finds it much more easily borne and equally efficacious when performed with the small short tube with a forcing-bottle as described in Dujardin-Beaumetz's "New Remedies," than when the stomach tube is used.

Sir Andrew Clark, Bart., directs attention to a peril incurred in Alpine winter climates by those patients who have renal complications.

He concludes his paper as follows: "From a critical study of the accessible histories of patients whom I have sent, on account of phthisis, to winter in Alpine altitudes, I have learned two important facts which deserve to be known. The first is that patients who go to those regions suffering from albuminuria seldom do well; and the second is that patients who whilst dwelling there become albuminuric almost always do ill.

"From these considerations, and also from others unnecessary to be recorded at present, I venture to suggest, for so long as our knowledge now stands as it does, that no phthisical person with albuminous urine should be recommended to winter at any Alpine height; and that every one beginning to have albuminous urine when dwelling there should be immediately sent away."

Prophylactic Treatment.—The Health Department of New York City have formulated the following rules, based upon the conclusions arrived at by a committee of physicians and pathologists of that city: Pulmonary tuberculosis (consumption) is directly communicated from one person to another. The germ of the disease exists in the expectoration of persons afflicted with it. The following extract from the report of the pathologists of the Health Department explains the means by which the disease may be transmitted.

Tuberculosis is commonly produced in the lungs (which are the organs most frequently affected), by breathing air in which living germs are suspended as dust. The material which is coughed up, sometimes in large quantities by persons suffering from consumption, contains these germs often in enormous numbers. This material when expectorated frequently lodges in places where it dries, as on the street, floors, carpets, handkerchiefs, etc. After drying in one way or another, it is very apt to become pulverized and float in the air as dust.

By observing the following rules the danger of catching the disease will be reduced to a minimum: (1,) Do not permit persons suspected to have consumption to spit on the floor or on clothes, unless the latter be immediately burned. The spittle of persons suspected to have consumption should be caught in earthen or glass dishes containing the following solution, corrosive sublimate, 1 part; water, 1000 parts; (2,) Do not sleep in a room occupied by a person suspected of having consumption. The living rooms of a consumptive patient should have as little furniture as practicable. Hangings should be especially avoided. The use of carpets, rugs, etc., ought always to be avoided; (3,) Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption, as soon after

eating as possible, using boiling water for the purpose ; (4,) Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons ; (5,) Do not fail to catch the bowel discharges of consumptive patients with diarrhœa in a vessel containing corrosive sublimate 1 part, water 1000 parts ; (6,) Do not fail to consult the family physician regarding the social relations of persons suffering from suspected consumption ; (7,) Do not permit mothers suspected of consumption to nurse their offspring ; (8,) Household pets (animals or birds) are quite susceptible to tuberculosis ; therefore do not expose them to persons afflicted with consumption ; also do not keep, but destroy at once, all household pets suspected of having consumption, otherwise they may give it to human beings : (9,) Do not fail to cleanse thoroughly the floors, walls, and ceilings of the living and sleeping rooms of persons suffering from consumption, at least once in two weeks.

REFERENCES.—" Bristol Med. Chi. Jour.," vol. vi. ; Clark, " Lancet," Jan. 5, 1889 ; Flint, " New York Med. Jour.," Dec. 8, 1889 ; " Amer. Jour.," Jan. 1889 ; Halter, " Ther. Gaz.," Dec. 1888 ; " Pract.," May, 1889 ; " Lancet," Oct. 27, 1888 ; Sept. 1, 1888 ; " Lond. Med. Rec." Dec., 20, 1888 ; Robinson, " Amer. Jour. of Med. Sc.," Jan. 1889 ; " Therap. Gaz.," July 15, 1889 ; Weeks, " New York Med. Rec." Aug. 3, 1889 ; Williams," Pract.," Feb. 1889 ; " Brit. Med. Jour.," Sept. 29, 1888 ; Niles, " New York Med. Jour.," Aug. 3, 1889 ; Schetelig, " Pharm. Post," May 20, 1889.

Synopsis.—(Vol. 1888, p. 406.) *Antiseptics.*—**Phenyl-Acetic** and **Phenyl-Propionic Acids** and **Sulpho-Carbolate of Soda**, gr. v to x ; **Antipyrin**, gr. xv t.d. for pyrexia, also **Quinine** ; the **Salicylates** and **Antifebrin**, gr. iij to v ; **Maltine** ; Dilute **Mineral Acids** ; **Phosphoric Acid** and **Strychnine**, as tonics ; **Arsenic** diminishes slight pyrexia and night sweats and may be combined with **Potassium Iodide**, if there is much consolidation ; **Arsenic** ; **Picrotoxin** ; **Quinine** ; **Strychnine** ; **Phosphate of Lime**, in night sweats.

(Vol. 1888, p. 408). *Cough.*—**Ipecacuanha** and **Ammonia**, when cough is loose and feeble ; a linctus containing **Morphia** or **Opium**, with **Hydrocyanic Acid** or **Bromide**, at night, if hard and frequent ; pure **Terebene**, if there is much dyspnœa ; If breath is offensive, a dry **Inhalation** through Coghill's respirator, *e. g.*, Creasote ; Iodine ; Carbolic Acid ; Eucalyptus, etc., with a few drops **Chloroform**, to allay cough ; **Belladonna** and **Stramonium**, for spasmodic cough. **Acalypha** (p. 1) ; **Carbonic Acid Gas** (p. 31) ; **Lachnanthes** (p. 72) ; **Quillaia**, Fever (p. 86) ; **Acetanilide** (p. 4) ; **Terpin-Hydrate** (p. 102), in night sweats ; **Agaricus** (p. 10) ; **Potentilla** (p. 83), in obstructed respiration ; **Sparteine** (p. 96), for cough.

(Vol. 1889, p. 386.) **Menthol** inhalations and injections in laryngeal and pulmonary forms, may be combined with **Lactic Acid** treatment. **Menthol**, 20% in **Olive Oil**, injected twice daily for about two months, using ℥v of the

solution in a pint of boiling water as inhalation, or this may be dropped on cotton wool and placed over the nose or mouth, and thus dysphagia is relieved. **Ipecacuanha Wine** pure or diluted with water as spray in fibroid phthisis; inhalation of **Sulphurous Acid** obtained by burning sulphur in a room. **Iodine** with **Liquid Vaseline**, subcutaneously, lessens cough and expectoration in tuberculosis with abundant secretion. ℞ Eucalyptol. Pur., 5 pts., Vaselini Liq. Medic.,20 pts., M.; used subcutaneously, also lessens cough and expectoration. **Creasote**, beginning with ♏j increased to ♏xij t.d., either in capsules or well-diluted in lukewarm water or combined with **Tincture of Gentian, Rectified Spirit,** and **Extract of Coffee**; some take it in **Ol. Morrh.**, and others with **Cocoa** powder. **Guaiacol** has been substituted for **Creasote**. **Tolu Balsam** obviates nausea and vomiting of **Creasote**. ℞ Pure Beech Creasote, v centigrammes, Purified Norway Pitch, Tolu Balsam, āā vijss centigrammes, M.; to make one capsule, 4 being given daily increased to 12. **Pure Terebene** relieves cough and dyspnœa. Super alimentation method of Debove, is valuable if anorexia, nausea, and vomiting prevent food being taken. **Phenacetin**, grs. v to viij, **Antipyrin**, grs. x to xv are best antipyretics given just before the time of rise of temperature; **Antifebrin**, grs. iij to viij, is more liable to cause sweating. *For Night Sweats:* **Zinc Oxid.**, grs. ij to v in pill at bedtime, or one of the mineral acids; **Arsenic, Strychnine, Quinine, Belladonna**, Ext. grs. ¼ to ½, **Liq. Atrop.**, ♏j to iv, **Picrotoxin, Dover's Powder** in small doses (½ gr.) at bedtime, **Phosphate of Lime**. *For the Cough:* **Pure Terebene** is specially useful if dyspnœa is great. *For Hæmoptysis:* **Gallic** and **Tannic Acids** alone or combined, **Ext. Ergot. Liq.**; **Tinct. Hamamelis**; **Lead Acetate**; **Oil of Turpentine**; counter-irritation by a blister; **Tannic Acid** has been injected into the lung itself with good results. **Lamium Album.** ℞ Tinc. Flor. Lamii Alb., ℥iv, Syr. Sacch., ℥ij, Aq. Dest., ℥ix, half a teaspoonful hourly (p. 51). *For Diarrhœa:* **Thymol**, grs. xxx daily in ijss gr. pills, two being taken at a time, or **Lactic Acid** may be used. The following have been recently recommended: Acetanilide, ℞ Acetanilide, Vin. Ipecac., āā ℥j, Tinc. Lactucæ, ℥j, M. gtt. xx ℥tis hor. in advanced cases with high temperature and constant cough (p. 10). **Hypnone**, gtt. v, inhaled every 4 hours, checks cough and expectoration (p. 47); **Ol. Menth. Pip.** as inhalation (p. 59); **Strophanthus**, ♏iij to vj every 6 hours as antipyretic (p. 68); **Agaricin**, gr. ⅛ at bedtime and repeated twice during night for night-sweats (p. 11); **Calcium Sulphide**, gr. $\frac{1}{10}$ modifies suppurative process (p. 27); **Geranium Maculatum**, grs. x to xl lessens cough (p. 42); **Hyoscin**, gr. $\frac{1}{200}$ to $\frac{1}{100}$ given hypodermically, palliative for the night-sweats (p. 46); **Hypnone**, 3 capsules at bedtime (each containing 10 centigrammes) as hypnotic (p. 47).

PHTHISIS OF THE LARYNX. *P. Watson Williams, M.B.*

This has lately been the subject of a great amount of patient investigation. The most recent methods of treatment of this disease were critically investigated by Sedziak, of Warsaw. We shall make his most valuable paper the basis of our remarks, and extract from it extensively.

Does primary Laryngeal Tuberculosis exist, i.e., with perfectly sound lungs, is a tubercular affection of the larynx possible? This is the principal question which, as regards its great practical importance, we must examine. Although the opinion of Orth, who in his "Pathological

Anatomy" (page 319) expresses himself as to this question as follows: "Only in very rare cases the larynx is primarily affected by tuberculosis, yet those authors go too far who deny this appearance at all," gains more and more adherents—Schrötter, Schech, Lefferts, Bresgen, Voltolini, Heinze, etc.—yet there are others who deny the existence of primary consumption of the larynx. To these belong Ziemssen, Klebs, Bosworth, and Morell Mackenzie. On the other hand, some authors, as Lennox Browne and Hunter Mackenzie, suppose that primary laryngeal tuberculosis is not such a rare phenomena as Orth affirms. That this is not so is proved by the fact that only three cases of undoubted primary tuberculosis of the larynx are recorded, as follows:—

(1,) *The case of Orth.*—At the autopsy of a young soldier Orth found extensive tubercular ulcers in the larynx, the lungs being perfectly sound.

(2,) *The case of Pogrebinsky, from Odessa.*—A butcher, eighteen years old, in the larynx extensive ulcers on the vocal cords, the rest of the larynx infiltrated. Death. Autopsy showed the edges of the ulcers uneven, tubercles on their base. The microscopic examination proved the tubercular character of the ulcers. The lungs quite healthy.

(3,) *The case of Demme, from Berne.*—A boy four and a half years old, healthy-looking; hoarseness. The laryngoscopic examination showed the mucous membrane very red and swollen, especially on the posterior part of the larynx. At the posterior part of the vocal cords a flat and uneven ulcer, the size of a cherry stone. Death. Necropsy showed, in the posterior part of the larynx, an extensive ulcer (in the secretion of the ulcer very numerous tubercle bacilli were found). The lungs entirely sound.

Besides these three cases, Massucci reports that Marchiava observed three autopsies, in which were found tubercular changes in the larynx without affection of the lungs.

There are two factors on which we must base the recognition of primary laryngeal tuberculosis: (1,) The lungs entirely sound, which we are able to prove at the autopsy (Stoker); (2,) Undoubted tubercular character of the laryngeal affection—only to be discovered by microscopic examination.

The three above stated cases—Orth, Pogrebinski, and Demme—entirely agree with both these points, and for this reason they furnish undoubted proof of the existence of primary laryngeal tuberculosis. On the other hand, they show that Orth is right when he says that the condition is extremely rare. There still exist, relatively, almost a great

number of observations, mentioned as primary consumption of the larynx, yet they do not agree with one of the above points, and, therefore, deserve the name of probable primary laryngeal tuberculosis. Thus, in one of them the necropsy showed, in fact, perfectly sound lungs, yet the character of ulcerations remains doubtful, on account of the want of histological and bacteriological examinations. In the other cases the character of the affection was undoubted, but they did not end in death ; so there is no absolute certainty that the lungs had not really been affected.

Thus it is proved that primary laryngeal tuberculosis exists, although during life we can only speak of the existence of a laryngeal tuberculosis as being more or less probable, and therefore the local treatment of laryngeal tuberculosis has a rational standpoint.

Is Laryngeal Tuberculosis Curable ?—As late as the year 1885 Orth expresses himself as follows :—" I have never seen an entirely recovered laryngeal tuberculosis myself, nor has, so far as I know, such a case been anatomically described and investigated."

This author by no means denies the possibility of a partial recovery (*particlle Heilung*), viz., that is to say, a cicatrization of individual ulcers in the larynx.

Heinze and Eppinger, and also Hooper and Krishaber, likewise oppose this opinion, which, however, gains more and more adherents, especially among clinicians, as Schnitzler, Prosser James, Rossbach Hayes, Senesse, Tobold, Prior, Ziemssen, Bosworth, Schech, Reichert, Cadier, Tauber, Moure, Krause, Sokolowski, Heryng Schmidt, Gouguenheim, and, lastly, Schrötter.

The question of curability of laryngeal tuberculosis is of very great practical importance. A decision in the negative brings with it therapeutic nihilism, while the acknowledgment of its possibility gives an impulse to the whole series of experiments having for their aim this recovery.

That phthisis of the larynx is curable we now possess certain proof. Heryng, in his work lately published (1887), described a very interesting case of spontaneous recovery in a woman, aged twenty, with fibrous phthisis of the lungs and a cicatrix in the posterior part of the larynx. The microscopic examination showed here the cicatrization of an extensive laryngeal ulcer. Thus we have an anatomical proof that laryngeal tuberculosis is curable, and that this recovery can take place spontaneously.

Dr. Sedziak cites six cases from the private practice of Dr. Sokolowski, showing that spontaneous recovery can be brought about by hygienic and dietetic treatment, *i.e.*, without the aid of any local

applications. In most of these tubercle bacilli were found in the sputa. In one there was a relapse after two years. Heryng reported eleven cases, and Rosenberg one case, of spontaneous recovery. Sedziak concludes that these cases teach us : (1,) That the spontaneous recovery of laryngeal tuberculosis is possible—in the first and third cases the cicatrization of ulcers had lasted four years ; (2,) That we should not be too optimistic in the prognosis of this disease, for we can never be sure whether the local process in the larynx may not break out again sooner or later, for instance, in the fourth case, after two years, which generally occurs with deterioration of the general state and progression of the local process in the lungs ; (3,) That we obtain the best prognosis in those cases in which there is a good general condition, with little or interstitial changes in the lungs, and which cases are placed under suitable hygienic and dietetic treatment.

But local treatment has been followed by much more satisfactory results, as might be expected, since Koch showed the connection beween tubercle and the bacillus tuberculosis. Some of the recent methods have already been referred to in the last edition of the "Medical Annual." Further investigation has demonstrated that success can only be attained by attention to minute detail.

The use of the spray has not been satisfactory in its results, for germicides applied in this manner cannot penetrate the layer of mucopus that covers the tubercular ulcers that we attempt to attack.

Menthol has been further investigated by Dr. Ossendovsky. He resorted to the menthol treatment in seven cases of laryngeal phthisis, complicating late pulmonary tuberculosis (in male patients aged from twenty-four to fifty). Only one of the cases referred to an early local lesion (infiltration in the inter-arytenoid space). In the remainder there were present, beside infiltration and congestion, multiple ulcers situated either about the inter-arytenoid space or on the true vocal cords. In one and all the sputa contained tubercle bacilli. In four of the patients the drug was employed simultaneously externally and internally. Menthol was used in the shape of a 10 to 30 per cent. oleaginous solution, which was *rubbed* into the parts by means of Heryng's cotton wool brush either once daily, or thrice weekly. In two of the cases, previously to the painting, the drug had been inhaled from Schreiber's apparatus, and, later on, insufflated with equal parts of burnt magnesia. The duration of the treatment in individual cases varied between three weeks and three and a half months. Four patients were still under observation. In all cases but one a marked improvement ensued, inflammatory phenomena subsided, pain lessened, ulcers assumed a healthier appearance, and decreased in size. A

complete cicatrization, however, could not be obtained in any of the patients. In the remaining case perichondritis supervened during the treatment.

From those experiments Dr. Ossendovsky draws the following deductions: (1,) **Menthol** is a good anodyne, securing a considerable, though temporary, subjective amelioration; (2,) It is very useful to administer the drug simultaneously externally and internally; (3,) The best plan is to begin the painting with a 10 per cent. solution, and gradually pass to stronger ones. A 40 to 50 per cent. solution gives rise occasionally to an intense local irritation.

We have found *Liquid Vaseline* an excellent vehicle for menthol, and certainly superior to solutions in olive oil, both for sprays and for brush applications.

It is best then to apply with a brush, preferably the cotton wool brush. If awkwardly performed this little operation induces spasm of the glottis. According to Heryng this especially occurs when: (1,) The fluid runs into the trachea from too abundant wetting of the brush; (2,) We introduce the brush too far under the cords, viz., into the inferior part of the larynx; (3,) We irritate too much the posterior region of the larynx with the handle of the brush.

Lactic Acid is decidedly in favour with most laryngologists, but results from its use are very variable. It is essential that the application be rubbed into the ulcers, and that the strength be gradually increased from a 25 to a 100 per cent. solution of the pure acid, and that they be made every day, or, at any rate, every alternate day. (See also "Med. Annual," 1889, p. 337.) We must mention also the application of lactic acid by parenchymatous injections, by means of Krause's syringe, into the sub-mucous tissues of the larynx. Heryng was the first who employed this method in tubercular infiltrations of the larynx. Favourable results were obtained by George Major, who employed a 20 to 30 per cent. solution of lactic acid, in doses of five to ten drops, equivalent to three-fourths of a grain in solution. This operation is almost painless, the swellings disappearing after twenty to thirty days, ulcers healing under the application. This author also advises deep penetration, in order to avoid the expectoration of the fluid. We have no experience ourselves with this method, but our favourable experience of intra-pulmonary injections in phthisis pulmonalis makes us hopeful that greater successes may yet be obtained by injections of other germicides. We have been favourably impressed with the use of solutions of the **Biniodide of Mercury** as a local application (strength 1 in 500, aqueous solution, with potassic iodide), and, as we have not found this solution give rise to much irritation when subcutaneously

injected into the arm or leg, it will possibly prove of greater service than the more irritating lactic acid.

Fernet recommends **Camphorated Naphthol** in the treatment of tubercular ulcerations. This substance is formed of a mixture of one part naphthol and two parts of camphor. It forms a greasy liquid, readily applied to skin ulcerations and accessible mucous surfaces. Dr. Fernet recommends its use in the treatment of boils, ulcerations of the skin of the mouth, and in diphtheria. He reported numerous cases of buccal tuberculosis which though not cured, were greatly relieved by this local treatment. In the case of a man, aged forty, who had not been ameliorated by energetic cauterizations with the thermo-cautery the lingual ulcer was modified in eight days by a daily application of camphorated naphthol.

Creolin has recently attracted much attention. Very favourable results seem to have followed the practical application of this drug, by Neudorfer, Rausche, (as an antiseptic remedy ½ to 2 per cent. with water, best each time freshly prepared). It has also been used successfully as a gargle (1 to 5 per cent.) in diphtheria and other diseases of the throat. Sedziak reports that in five cases of laryngeal tuberculosis treated by brushings with creolin the results obtained were excellent (1 per cent. solution).

Numerous other antiseptics have had their adherents, such as boric acid, carbolic acid, creasote, perchloride of mercury, charcoal, salol, benzoate of sodium, thymol, iodine, iodoform, iodol, nitrate of silver (1 in 30), sesquichlorate of iron (1 in 30) chloride of zinc (1 in 50), chromic acid, etc.

The use of the galvano-cautery has been favourably reported on by Gougenheim, Sedziak, and others, and "seems to have a future before it."

The Surgical Method.—Under this name we understand three operations: (1,) Endo-laryngeal incisions (scarifications), *i.e.*, the method of M. Schmidt; (2,) Curettement (endo-laryngeal scraping), *i.e.*, the method of Heryng; (3,) Tracheotomy, *i.e.*, opening of the windpipe. Of these methods we shall now speak more fully, at the same time showing the results of sixteen suitable observations derived from Dr. Sedziak's hospital practice.

(1,) *Schmidt's method endo-laryngeal incisions.*—During the years 1877, 1878, and 1879 Schmidt treated more than three hundred cases by deep incisions, and obtained a recovery in sixteen cases, *i.e.*, 5 per cent., and in thirty-three cases amendment, *i.e.*, 10 per cent. Sokolowski and Sedziak also report on the method favourably, the latter especially if scarifications are followed by lactic acid locally

applied. The incisions are made by means of ordinary laryngeal knives, slightly modified.

(2,) *Curettement.*—Heryng obtained a speedy diminution of pain and difficulty in swallowing, due to cicatrization, in fifteen out of twenty cases treated by this method of scraping. Sedziak's and others' experience in five cases treated thus was equally favourable.

(3,) Tracheotomy has long been applied as a palliative remedy for laryngeal phthisis, but to Moritz Schmidt belongs the credit of advising tracheotomy as a therapeutic operation. Hunter Mackenzie considers as favourable features in this operation: (1,) Rest to the larynx: (2), Facility of access to surgical treatment. This method is mainly indicated in cases where there is dyspnœa from partial closure of the glottis, and in extreme odynphagia.

Dr. Sedziak, summing up his own observations and those of others, arrived at the following conclusions :—

(1,) Primary laryngeal tuberculosis exists undoubtedly.

(2,) This disease, however, is exceedingly rare.

(3,) The curability of so-called laryngeal phthisis is undoubtedly possible.

(4,) Recovery from laryngeal tuberculosis is rare, but it can take place in certain cases under local treatment, or even without it (sanatio spontanea).

(5,) Partial recovery from laryngeal phthisis, viz., the cicatrization of single ulcers, must be considered not only as possible, but even apparently often obtained.

(6,) This partial recovery occurs under the influence of local treatment.

(7,) The recovery of laryngeal tuberculosis and cicatrization of single tubercular ulcers takes place especially in those cases where the general state is good and the changes in lungs are of interstitial nature, showing the tendency of the organism to the formation of connective tissue.

(8,) Local treatment is the only rational method of treatment of laryngeal tuberculosis.

(9,) Cocaine is an appreciably useful drug in laryngeal phthisis.

(10,) Of the numerous drugs, applied locally for laryngeal tuberculosis, lactic acid is the most important.

(11,) From the combined method—lactic acid, galvano-cautery, surgical treatment—we can expect the best results in treating laryngeal tuberculosis.

(12,) As in syphilis, typhus, etc., stenosis may result from tubercular disease.

(13,) Tubercular growths of the larynx are not rare, and they may be symptoms of primary laryngeal tuberculosis.

(14,) We have often to do with a combination of syphilis and tuberculosis of the larynx.

(See also "Med. Annual," 1889, p. 336.)

REFERENCES.—Ossendovsky, "Jour. of Laryng.," 1889; Fernet, "Le Progrès Méd.," Mar. 9, 1889; Sedziak, "Jour. of Laryng.," June, 1889.

PILES. *Herbert W. Allingham, F.R.C.S.*

During the past year a good many papers have been written upon this subject, but very little really new matter has been added. We shall therefore mention important points in connection with the treatment of piles, and refer to any progress in which practical suggestions have been offered.

Space need not be wasted in describing the varieties of piles; suffice it to say that they fall under two main heads—the external and the internal. The external piles when inflamed had better be treated by the application of ointments or lotions, such as :—

℞	Bismuth Subnitratis	℥ij	or	℞	Liq. Plumbi Subacetat. ℥j
	Hyd. Subchlor.	℈j			Liq. Opii Sedativus ℥ss
	Vaseline	℥j			One teaspoonful of the lotion to be mixed with two teaspoonfuls of milk.

If pus has formed in the piles they should be opened or cut away.

Internal Piles.—There are many forms of internal piles; the most important of which are the venous piles, chiefly caused by excesses in diet, drink, etc; and the arterial pile, which, although aggravated by excesses yet, at the same time, is a new formation. The treatment of the venous variety consists in judicious purgation, for which some of the following aperients may be found useful :—

℞	Pil. Hydrarg.	gr. ss	or	℞	Mag. Sulph. grs. xx
	Ext. Col. Co.	gr. ss			Liq. Ammon. Acetati ℥ss
	Pulv. Rhei	gr. ss			Mag. Sulph. grs. xv
	Ol. Juniperi	♏j			Pot. Nitratis grs. xv
	M.				Liq. Ext. Cascara ♏x

To be taken two or three times a day.

Dr. A. De Watteville speaks in the following terms of hazeline for the relief of mild cases of piles : "I have found, more than once, great relief or temporary cure speedily follow upon the free use of **Hazeline,** or extract of hamamelis, as a rectal injection. The most convenient instrument for that purpose is the now well-known syringe designed for the injection of glycerine as an excitant of rectal contractions. The only drawback of the method is what appears to be the absurdly high price charged for hazeline. The quantity I used is two to four drachms frequently during the day and evening." As far as

our experience shows this is only of temporary benefit, as the bowel soon gets accustomed to the use of the injection, which then loses its astringent powers.

In the bleeding internal arterial and the prolapsing venous pile, operative procedure is absolutely necessary to obtain any lasting benefit. During the past year the modes of operating chiefly used have been some of the following: Crushing, which we think is the best operation when the piles are not too large and not too numerous. The operations should be performed in the following manner: The hæmorrhoid is drawn into the screw crusher (see *Fig.* 42), by means of a vulsellum, and this being entrusted to

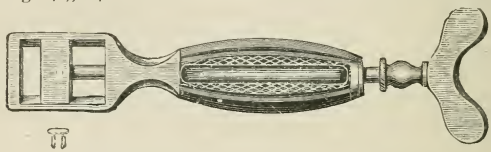


Fig. 42.—Herbert W. Allingham's Pile Crusher.

an assistant, the bar is pushed up and screwed home as tightly as possible. The pile should be crushed longitudinally and not transversely; its projecting portion is cut off. This is most certainly the least painful of all methods of removing internal piles.

Dr. Charles Kalsey has written an elaborate paper discussing the treatment of piles by ligature, clamp, and cautery, and by Whitehead's operation of excision of piles. He concludes his paper by saying, "All three of them give the same satisfactory results in the end, but the clamp and the method by excision cure with less pain than the ligature; and the clamp operation is much simpler than that of excision, while possessing all its advantages."

A modification of Whitehead's operation has been proposed, in which is suggested an easier and more rapid method of performing excision of the "pile area" when that is necessary.

Dr. Joseph Matthews, of Louisville, U.S., recommends a slight modification of the treatment of piles by ligature combined with incision. This consists in running a delicate knife around the base of the pile, simply going through the integument. This saves any deep cut, and at the same time removes all superfluous skin or external piles.

The treatment of piles by injection of **Carbolic Acid,** 1 in 10, has been strongly recommended during the past year by Mr. Swinford Edwards. But he admits that this treatment should be only adopted

in certain selected cases. Mr. Edwards operated upon thirty-eight cases with complete success.

REFERENCES.—De Watteville, "Lancet," February 23, 1889; Allingham, "Diseases of Rectum" (Crushing), Edit. v.; Kalsey, "New York Med. Jour.," December 8, 1888; Allingham, "Med. Press & Cir.," 1888; Matthews, "Jour. of Amer. Med. Assoc.," Dec., 1888; Swinford Edwards, "Brit. Med. Jour.," Oct. 13, 1888.

PITYRIASIS RUBRA.

Synopsis.—(Vol. 1889, p. 392.) **Arsenic** in large and long continued doses; diuretics, enveloping body in bandages soaked in **Calamine Liniment**, using an aperient if necessary, and giving ℞ Pot. Bicarb., grs. xx, Ac. Citrici, grs. xij, Quin. Sulph., grs. iij to v, taken effervescing and repeated every 4 hours. For *Pityriasis Rosea:* **Ung. Ac. Borac.** or **Calamine Lotion** with **Liq. Carb. Detergens**, ♏x to ʒj to allay itching.

PLACENTA, Adherent (See "Obstetrics").

PLEURISY (with Effusion). *Frank J. Wethered, M.D.*

Dr. P. Blaikie Smith ("Brit. Med. Jour." Oct 13, 1888) reports two cases of pleuritic effusion treated by the administration of **Saline Cathartics** instead of by paracentesis, both of whom did well. This class of drugs induce watery evacuations from the bowels, with the result that the blood becomes inspissated, and absorption stimulated. Two drachms of **Magnesium Sulphate** were dissolved in as small a quantity of hot water as possible, and given twice a day, this salt being selected on account of its effective cathartic properties, and from its great solubility. The effect of the treatment was soon apparent, and in eleven days all signs of effusion had disappeared, and the heart was restored to its normal position. The secretion of urine was markedly reduced during the time the patient was under the cathartic treatment, while it increased above the normal amount after the drug was discontinued. Dr. Blaikie does not recommend the indiscriminate adoption of this mode of treatment; patients of poor physique, or in whom a phthisical tendency exists, are obviously illsuited for it. Dyspnœa is an urgent symptom, and the use of the trocar gives more speedy relief than that afforded by free purging.

Professor Küster delivered an address on the treatment of pleural empyema before the Berlin Medical Society, in which he brought forward a method of treatment based on his own experience, which differs considerably from the therapeutic measures of treating this disease at present commonly employed in Germany. He bases his mode of procedure on the following points: In the thoracic cavity the bony thorax forms one wall; between the ribs are stretched the soft parts which are capable of a certain degree of movement;

while the other wall of the pleural cavity consists partly of the lungs and partly of the pericardium, if the empyema is on the left side, and partly of the diaphragm. The inner wall is thus formed of extensible, or, at least, movable organs. If now, it is imagined that the lungs are so compressed as to admit of no further displacement, it is evident that a reduction of the cavity may be possible either through ascent of the diaphragm or a depression of the intercostal tissues, though it is evident that a complete obliteration of the cavity can never take place in this way.

It is evident then, that, to accomplish cure by obliteration of the pleural cavity, attention must be directed towards regaining the expansibility of the lungs, and that this is only possible when the compression of the lungs has not been of long duration. Operative interference, therefore, is called for at the earliest moment possible, and the opening into the pleural cavity must be made by resection of a rib and at its most dependent point, and so treated that the sides of the incision do not fall together, so interfering with the free exit of the pus.

Professor Küster bases his method of treatment on the above fundamental principle, and has met with the most surprising results. These are extremely interesting, and a short *résumé* may here be given. His cases may be divided into six groups :—

(1,) *Uncomplicated Empyema.*—This group comprised thirty-nine cases, of which thirty-four were completely cured ; four cases died (one from carbolic acid poisoning) ; one case was discharged uncured.

(2,) *Cases of Chronic Empyema* (longer than six weeks).—Of the seventeen cases belonging to this group eleven were cured, three died, and three were discharged uncured.

(3,) Cases which had been previously unsuccessfully treated, resulting in thoracic fistulæ of several months' duration—fifteen cases, eight were healed, six died, one remained unhealed.

(4,) *Cases with Pulmonary Gangrene.*—Three cases, two died, one was cured.

(5,) Cases complicated with diseases which were themselves to be regarded as almost invariably fatal. Cancer and basilar meningitis, three cases comprised this group, and all died.

(6,) *Tubercular Empyema.*—Thirty-two cases : Six were healed, fourteen died, twelve remained unhealed.

Mr. R. J. Godlee contributes a long and valuable paper on the association of pericarditis with empyema. He commences by expressing his opinion that pericarditis is not at all an infrequent accompani-

ment of pleurisy and of empyema. It is doubtless more frequent when the pleural affection is on the left side, but Mr. Godlee's illustrations serve to lead up to the simple suggestion of the *a priori* probability that inflammation may extend from either pleura by direct contact to the pericardium, whether the pleural inflammation be in the ordinary acceptation of the term septic or not. Mr. Godlee thinks that from the frequency with which a more or less adherent pericardium is met with after death, without any grave change in the condition of the heart, we may fairly conclude that it is not always followed by very serious consequences.

Mr. Godlee next records very fully, two cases of empyema complicated with pericarditis, both of which proved fatal, and then proceeds to discuss the question of puncturing the pericardium. He quotes from Dr. Samuel West's paper on Purulent Pericarditis ("Med. Chir. Trans.," vol. lxvi., page 235), and goes on to say that from the consideration of anatomical conditions, one would have been disposed to recommend a puncture quite close to the sternum, notwithstanding the risk of wounding the internal mammary artery, but even then there would be a considerable chance of wounding the pleura. After considering various experiments made to ascertain the most advantageous points for puncture, Mr. Godlee thinks that with great mental reservation we may allow ourselves to draw the following conclusions:—

(1,) If the needle be introduced to the left of the sternum it should be directed to the right and backwards; a curved cannula, which might be made to take subsequently a direction to the left, so as to reach the posterior surface of the heart, would probably work well. If, on the other hand, the puncture be made to the right of the sternum, the cannula should be directed backwards and to the left.

(2,) The puncture should be made as low as possible, and if it seems otherwise necessary to select a high interspace, say the fourth instead of the fifth, great care must be exercised in introducing the trocar, as it is quite likely that the heart may be touching the front of the pericardium even although there may be very considerable distension.

Mr. Godlee concludes his admirable paper by a discussion on the possible mischief which may result from the opening of the pleura, in the attempt to reach some deeper structure, namely: (1,) The occurrence of pneumothorax; (2,) The induction of pleurisy.

References.—Küster, "Ther. Gaz.," Feb. 15, 1889; Godlee, "Practitioner," Jan. and Feb., 1889.

Synopsis.—(Vol. 1889, p. 393.) Injection of **Cocaine**, gr. $\frac{1}{8}$ or $\frac{1}{4}$ at seat of pain, repeating it once or twice daily, relieves pain and lessens tendency to effusion.

PNEUMONIA AND INFLAMMATORY DISEASE OF LUNGS. (See also "Broncho-Pneumonia.") *Frank J. Wethered, M.D.*

Dr. Strong, of Elizabethtown, N.Y., has tried very large doses of **Calomel** in croupous pneumonia, and the results have been very good. All were in the stage of exudation, with high or rising temperature. In every case there was immediate improvement in temperature, respiration, and the heart's action. His usual and smallest dose has been 20 grains every three hours; in most cases continued for twenty-four hours. There was no ptyalism in any case, and but moderate catharsis. Dr. Strong has followed the same plan of treatment in three cases of membraneous croup. All were reported as improving in breathing before the second dose, and all made a rapid recovery. He confesses that these few cases are not enough alone to prove the utility of the remedy, but they have convinced him that we can safely give, in similar conditions, doses that a few years ago would have been considered reckless.

Dr. F. P. Atkinson directs attention to the use of **Quinine** in such affections as pneumonia, broncho-pneumonia, and whooping cough. He recommends in the case of adults 3 grains dissolved in a little dilute hydrobromic acid every three or four hours. It should be given either before or after food, otherwise it is apt to cause sickness. In the case of pneumonia in particular, if there is much headache in the early stages, 3 or 4 minims of the tincture of **Digitalis** should be combined with the quinine.

If the skin keeps hot and dry, and the urine is loaded with urates, it is as well to give a little effervescing **Citrate of Potash,** combined with some sweet **Spirits of Nitre,** alternately with the quinine, but this should be stopped as soon as diaphoresis occurs. Brandy in tablespoonful doses every four hours is advisable from the start. In the case of pleurisy, the combination of **Morphine** is necessary, and the use of a little **Grey Powder** often proves very useful. In whooping cough it perhaps acts antiseptically on the germs which have their habitat in the upper part of the pharynx. Dr. Atkinson believes that quinine is a safer antipyretic than antipyrin, antifebrin, or phenacetin. He considers that it shortens the duration of pneumonia, and, certainly in the case of infants many cases that in old days would have been considered perfectly hopeless now make a good and quick recovery. The value of **Quinine** in whooping cough is most marked, for it undoubtedly controls the spasms, and Dr. Atkinson thinks that it also shortens the

duration of the disease. At any rate with its use inhalations are entirely unnecessary, and there is never that prostration which in some cases results from the use of bromides and belladonna. Where there is much secretion, or an apparent want of nerve-power, the combination with it of the syrup of the **Lactophosphate of Lime** proves of great service.

M. Netter related at the Societé de Biologie, in Paris, a case of a woman who gave birth to a child when she was suffering from acute pneumonia. The child lived five days, and at the post-mortem examination pneumonia of the apex of the right lung was found, along with double pleurisy, suppurative pericarditis, and cerebro-spinal meningitis. A microscopic examination showed the pneumo-coccus. The rarity of such pneumonia at that age contributes to the support of the conclusion that it was in this case due to infection from the mother.

The well-known stimulating action of caffeine on the cardiac and respiratory centres has led Ye Gempt (" Berlin Klin. Wochens.") to employ it largely in diseases of the lungs. The double salt (**Sodio-salicyate of Caffeine**) is to be preferred on account of its greater solubility and the rapidity with which it is absorbed ; 3 grains of the salt per day is seldom sufficient, while over 7½ grains per day is not needed. The number of cases treated was forty. After discussing the subject fully and reporting some of the cases in detail, the author draws the following conclusions : (1,) The use of the double salt of caffeine is indicated in the course of acute fibrinous pneumonia whenever observations on the activity of the heart and the pulse show a diminution in the strength of the heart, a fall of the arterial pressure or an abnormal frequency or an irregularity of the pulse ; the continuance or increase of which symptoms becomes threatening to life ; (2,) The drug is to be made use of, when possible, before actual evidences of collapse appear ; and if these are suddenly developed, the indication is so much the more urgent and the effect is still often good ; (3,) In conditions of weakness, valvular lesions, atrophy of the heart, likewise in drunkards and in old persons, its employment should be commenced in the beginning of the disease ; (4,) The action of proper doses consists in diminution of frequency of pulse and respiration, increase of arterial pressure, lowering of temperature and favourable action on the subjective sensations of the patient. The use of stimulants is not excluded by the administration of caffeine. They are to be given under the known indications for them ; (5,) The action of the drug soon commences, but in threatening cases can be made still quicker and surer by means of subcutaneous injection of the remedy. After the fall of temperature, caffeine is only

to be given for a short time ; (6,) The same indications for the use of caffeine hold good in atelectatic or hypostatic conditions of the lungs ; (7,) The employment of the double salts of caffeine in emphysema or asthmatic conditions is indicated by the same signs as those for the use of the drug in diseases of the heart.

REFERENCES.—Strong, "Practitioner," May, 1889 ; Netter, "Le Progrès Médicale," March 16, 1889 ; Atkinson, "Practitioner," June, 1889.

Synopsis.—(Vol. 1888. p. 411.) **Quinine**, gr. x, two or three times daily ; or **Sod. Salicylate**, gr. xx, if temperature is high ; **Liq. Ammon. Acet.** and **Citrate of Potash**, to commence with ; **Carbonate of Ammonia** and **Alcohol**, should prostration threaten, or in cases of septic nature ; **Tinct. Ferri.** dose xx drops, during consolidation, in septic cases ; Tinct. **Digitalis**, ℥v to x, if heart is feeble, and may be combined with Iron and **Acetate of Ammonia**, in some cases ; If cough increase after crisis, a mixture of **Ammonia, Ipecacuanha** and **Tolu**, with **Iodide of Potash**; To aid resolution, the **Iodides** and **Arsenic** are valuable ; If purulent infiltration of lung set in, **Alcohol, Bark**, and **Ammonia**, and especially **Quinine**; when expectoration is fœtid and gangrenous, **Eucalyptus**, x drops, with an equal quantity of **Spirit**, inhaled from a respirator for thirty minutes, every two or three hours.

Lobar or Broncho-Pneumonia.

Synopsis.—(Vol. 1888, p. 413.) **Quinine** or **Antipyrin**, the latter in small doses, to reduce pyrexia ; **Sal. Volatile** ; **Ipecacuanha** with **Alkalies**, for cough ; **Quinine**, in moderate doses ; **Iodide of Potassium**, in full doses ; **Tinct. Ferr. Perchlor.** ℥x, 3tis hor, if disease runs a sub-acute course ; **Arsenic** and **Iodide of Potassium**, if resolution is tardy. **Lachnanthes** (p. 72).

(Vol. 1889, p. 394.) **Saline Purgatives, Diuretics**, and **Diaphoretics** ; **Digitalis** leaves ℥j to ij in infusion during 24 hours ; **Tartar Emetic**, gr, $\frac{1}{6}$ hourly to young adults, less often to older patients ; **Ice Bags** for treatment of broncho-pneumonia in children, or **Leiter's Tubes**. **Acetanilide**, gr. xl per diem in sthenic cases (p. 9).

PNEUMOTHORAX.

Synopsis.—(Vol. 1889, p. 396.) Stimulants, with **Opium** or **Morphia**, for the shock, or diffusible stimulants, *e.g.*, Sp. **Ætheris**, with inhalations of **Iodide of Ethyl** or **Nitrite of Amyl** ; aspiration if dyspnœa and cyanosis supervene ; removal of fluid, replacing it by sterilised air where pleural effusion has set in.

POISONING. (See "Narcotic Poisoning.")

POLYARTHRITIS.

Synopsis.—(Vol. 1889, p. 50.) **Kava Kava.** ℞ Ext. Kavæ. depur. gr. xlv ; Sacch. Alb., grs. ccc, M. Ft. Pulv. Div. in dos. x; Sig. Pulv., j 3tis hor., relieves the pain but does not cure the disease.

POST-NASAL GROWTHS. (See "Naso-pharynx, Adenoid Vegetations of.")

PREGNANCY. (See "Obstetrics" and "Uterine Appendages.")

PROGRESSIVE MUSCULAR ATROPHY.

Charles L. Dana, M.D., New York.

Dr. Michell Clarke reports the case of a man, a leather dresser, with a history of syphilis and rheumatism, who developed the symptoms of progressive muscular atrophy. The thumb muscles and interossei were alone affected, and these chiefly in the right hand. The disease had lasted two months. Under **Iodide, Arsenic, Rubbing,** and **Galvanism,** the patient gradually recovered, and in four months could go to work. ("Brist. Med. Chir. Jour.," Oct., 1888.)

PROSTATE, Diseases of. *E. Hurry Fenwick, F.R.C.S.*

Mr. Berkeley Hill, in a series of three lectures on some affections of the genito-urinary organs, of which the following is a summary, states prostatic catarrh to be a very common accompaniment of chronic inflammation of the penile portion of the urethra. There is a liability of prostato-urethritis to arise in gouty people on small provocation, such as excessive acidity of the urine. Such affections are increased by specifics against gonorrhœa and usually assuaged by **Alkalies** and **Colchicum.** One chief symptom is the sense of heat produced by the passage of a sound over the membrano-prostatic urethra. The changes of the surface, as seen through the electric urethroscope, are granular thickening, enlargement of the papillæ of the surface, and erosions.

Infiltration and condensation changes in the membrane of that part of the urethra do not take place. The prostate becomes in catarrh regularly marked with slight elevations, and depressions of purple or crimson hue. In the depressions are placed little flecks of viscid matter. The shape of the prostatic portion varies considerably. When much congested, the surface rises into a rounded form. When congestion ceases, the surface sinks till nearly flat.

With mere prostatic catarrh the examination with the finger in the rectum does not usually detect any change of health. The treatment consists mainly of local applications and in a *régime* from which excitement and excessive exercise are excluded. The local treatment is repeated, injections of small quantities of astringent solutions, *e.g.*, nitrate of silver. Occasionally the specifics, **Cubebs** and **Buchu, Sandalwood, Copaiba,** etc., are useful.

Prostatitis. *Symptoms.*—In inflammation of the substance of the prostate, besides the symptoms of granular prostatitis, there are aching or stabbing pains in the anus, sacrum, or perineum; pain at the suprapubic region is a common sign. There are also radiating lumbar or femoral pains after exercise or long journeys, general languor, *malaise,* or depressed spirits. Increased frequency of micturition is often absent; when present, it is felt by day, not by night.

The flow of urine is altered by delay at the beginning, which may amount to retention. Dull pain after micturition, sometimes spasms at the end of the flow, with a sense of more to come are complained of. In cases of long standing, micturition during sleep is a symptom—constipation is almost invariable. When the congestion is great, there is pain during defæcation, and between the acts a sense of weight at the anus or in the perineum. Pain in the testes when it occurs is simply a neuralgia. There is constantly hypersecretion of mucus.

In some patients the organ recovers its natural condition in a few weeks; but usually the disease drags on a course more or less wearisome; thus the termination is very uncertain. Relapses are almost sure to follow, if the patient exceed in his diet or *régime*. In relapses small abscesses often collect in obstructed ducts, which usually empty themselves through a duct before accumulating much. Sometimes the inflammation spreads to the parenchyma, and the prostate then becomes unyielding to the touch, hard, and sensitive. The enlargement of the organ may last long. The increase in size may be symmetrical, or only affect one part, giving the sensation of irregularity or lobular form when felt by the finger. In course of time, the nodules may disappear, and the organ regain its natural size, or even shrink below it, and feel quite firm and smooth.

TREATMENT.—The treatment of chronic prostatitis is very tedious. Of the many remedies in use, but few are trustworthy. General treatment only assists local remedies. In the first place the dyspepsia must be cured. The tonics most beneficial are **Iron** in non-astringent forms; **Nux Vomica** or **Strychnine** are usefully added to the iron. **Belladonna** also may be added to the tonics, if micturition during sleep be a symptom. **Ergotine** is especially useful when the organ is large, and aching is caused by walking, or standing, or railway journeys.

When the organ is enlarged, soft, and not tender, a very good remedy is the **Cold Sitz Bath,** taken at first for one or two minutes, once or twice daily, at a temperature of 50°F., gradually prolonged to ten minutes, and lowered to 40°. The **Cold Douche** on the perineum or anus is also useful. **Cold Enemata** are more generally beneficial than baths, two to four ounces of **Cold Water** thrown into the rectum daily, and retained there; beginning at 45°F., and gradually lowered to 35°. Among recognized remedies is **Blistering** the perineum, but Mr. Hill has no faith in its efficacy. Caustic injections are valuable if used after other means. The solution of 20 to 30 grains of **Nitrate of Silver** to the ounce, and 10

minims injected at a time, is a good preparation. This has to be repeated several times.

Prostatitis from Masturbation or Excessive Venery.—Masturbation is a frequent provocative of prostatitis, sometimes in the acute form, more often in the subacute or chronic forms. In the mildest form of prostatitis through masturbation, the prostate bleeds easily, the urine is often tinged with blood, smoky, or even coffee-coloured. If felt per rectum, the organ is found little changed from the natural condition. General *malaise*, inappetency, and slight elevation of temperature usually accompany the bleeding. Bleeding from the congested prostate may be copious in young men when it follows prolonged venereal excitement and excessive copulation. Commonly very copious when thus originated, it may be profuse for an hour or two, and exhausting.

TREATMENT.—In these affections the liquid extract of **Salix Nigra**, a drachm three times daily, has often a marked effect in checking involuntary emissions, and thereby preventing the irritation and exhaustion and neuralgia which some persons feel after these attacks.

Sequelæ of Prostatitis.—Persons who have suffered from a congested prostate are liable to too speedy ejaculation during copulation. This may be so rapid, and erection so fugitive, that effective coitus is impossible. For such cases the liquid extract of **Damiana** has sometimes a powerful effect. But cure is almost hopeless if continence is neglected. Some persons give way to the sexual appetite without limit. Then follows a condition of great helplessness. The intense neuralgia of the lower extremities which follows the shortest walk renders exercise impossible. Pain is rarely absent, even when at rest; it extends from the sacrum along the spinal column to the occiput. The digestion is deteriorated. Topical treatment, after the mucous catarrh and chronic inflammation of the prostate is quelled, must be laid aside. The best remedy is a life of quiet, absence of exertion of any kind; a long sea-voyage is one of the best remedies. In rare cases chronic parenchymatous prostatitis excites temporary mania, which has erotic irritation for an early or leading symptom. It disappears if the patient recovers from the physical affection. [Note. There is some similarity between the symptoms of prostatitis and inflammatory condition of the seminal vesicles (*vide* "Seminal Vesiculitis")].

TUBERCULOUS DISEASE. *Etiology.*—This frequently follows gonorrhœa. In the early stages the symptoms, being those of catarrh, escape notice, and the tubercle in the prostate cannot be detected by the finger until it has become considerably developed.

Early Symptoms.—This catarrhal condition of the prostate, with slight irritation of the bladder, lasts an indefinite time ; eventually attention is directed to the prostate by the occurrence of other symptoms, such as frequent seminal emissions or by weight in the perineum and pain in the sacrum. In other cases, the patient notices increased frequency of call to micturate, but a slowness in starting the stream of urine ; then he feels a burning or cutting pain during the flow.

Later Symptoms.—As soon as the shape and consistence of the prostate are altered, the finger in the rectum finds the prostate irregular, perhaps larger than natural, tender, particularly at the posterior part near the trigone. The disposition of these irregular thickenings is variable. When cystitis is developed, copious viscid pus mixed with shreds and blood-clot form the urinary sediment, and the urine contains albumen in considerable quantity. The further progress of the case is accompanied by gradual participation of the ureters and kidneys in the septic inflammation, and the patient is gradually exhausted. Acute general tuberculosis may terminate his sufferings.

Use of the Cystoscope.—Mr. Berkeley Hill has inspected two cases of advanced disease by the cystoscope, and the surface was irregular, with pits at the uvula vesicæ or neighbouring part of the floor of the bladder, partly filled with shreds of tissue, muco-pus, and blood-clot, though in those cases, cystitis, ulceration, burrowing abscess in the floor and walls of the bladder are usually super-added before death.

[We have elsewhere published details of eight cases of tuberculosis of the bladder, examined by electric light, and are of opinion that if tuberculous ulceration is placed upon the trigone it is almost always secondary to a deposit in the prostate ; if placed on the body of the bladder it is usually primary. The aspect of the ulceration in these two regions is somewhat different. That on the floor is usually more extensive but shallower, the ulcers having sharply defined edges, whilst that on the posterior wall commonly exciting more inflammatory œdema appears deeper and more severe.] (Compare "Bladder-cystoscopy.")

Differential Diagnosis of Tubercle in the Prostate.—In early cases the presence of tubercle elsewhere may be wanting, as the prostate is often affected before other organs. The disease most commonly suspected when tubercle is irritating the prostate is stone in the bladder. The urine is at first only moderately turbid in both. In prostatic tubercle there is often a gleet, or history of such having

continued since an attack of gonorrhœa ; a little shreddy mucus may be washed out with the first portion of urine voided, the remainder being only slightly turbid. In stone, on the other hand, a drop of blood often comes at the end of the stream instead of pus at the beginning. When blood comes from the prostate it is usually washed out first as coagula mixed with curdy pus. If the patient be sounded and stone be there, it can be generally detected. Sounding does not always discover any alteration in the shape of the prostate or trigone unless the tuberculous disease be far advanced. The distinctions of vesical tumour from prostatic tubercle are so great that confusion is not likely to occur. Tuberculous pyelo-nephritis creates symptoms which often suggest disease of the neck of the bladder. In these cases the absence of change in the condition of the prostate and the presence of tenderness in the renal regions indicate the real seat of disease.

TREATMENT.—In the early stages the catarrh must be cured, and the general treatment for tubercle applied. In the later stages the ragged cavities must be carefully washed out. A good antiseptic solution is two grains to the ounce of **Sulphate of Quinine,** two ounces being injected and left in the bladder after the pus and urine are well cleared out by repeated small injections of **Boric Acid Solution.** Still more antiseptic is an emulsion of **Iodoform.** In cases of chronic cystitis, if the bladder is well washed, and a couple of drachms of this emulsion injected, the most fœtid ammoniacal urine is replaced by acid urine, fœtor disappears, and the pus rapidly diminishes. In cases of cystitis caused by neglect of prostatic retention, the urine in ten days becomes quite free from deposit, and even when calculus, or tumour, or malignant ulceration co-exist, the improvement is enormous.

Iodoform Emulsion has been used for some years with good results at St. Peter's Hospital for urinary diseases. No toxic effects have been observed.

REFERENCES.—Berkeley Hill, "Brit. Med. Jour.," July 6, 1889, p. 8; Hurry Fenwick, "Electric Light Illumination of the Bladder and Urethra," 2nd Edit., 1889.

THE ENLARGED PROSTATE. *Is it curable?*—The distressing symptoms arising from the senile diseases of the prostate have hitherto either been palliated or treated with masterful inactivity. Progressive surgeons have at length directed their attention towards obtaining a "radical" cure by operative interference. Mr. McGill, of Leeds (*vide* "Annual," 1889,) has proposed, and has carried out, the suprapubic removal of the salient and offending portions of the

diseased gland. Others have followed his example, and it is now contended :—

(1,) That the enucleation of large pieces of the obstructing gland is neither formidable nor fatal.

(2,) That Sir Henry Thompson's dictum, "that a confirmed atony of the bladder consequent upon prostatic enlargement is *incurable* even by the removal of the obstruction, is a fallacy founded upon a false hypothesis."

(3,) That *timely* and judicious surgical interference will prolong life, and in many cases remove that source of intolerable suffering which so often renders old age unbearable and death a happy release.

The following propositions are now generally accepted : (1,) That prostatic enlargements which give rise to urinary symptoms are intra-vesical, and not rectal ; the severity of the symptoms in a case of hypertrophy of the prostate bears little or no relation to its apparent size as felt through the rectum.

There are many varieties of the intra-vesical growth: (*a*,) A projecting middle lobe—pedunculated or sessile ; (*b*,) A middle lobe with lateral lobes forming three distinct projections ; (*c*,) The lateral lobes alone ; (*d*,) A pedunculated growth springing from a lateral lobe ; (*e*,) A uniform circular projection surrounding the internal orifice of the urethra ("collar").

(2,) That retention is caused by the valve-like action of the intra-vesical prostate, the urethral orifice being closed more or less completely by the contraction of the bladder or its contents.

(3,) That in many cases self-catheterism is the only treatment required.

But if the catheter treatment fails; if in spite of care and cleanliness, chronic cystitis supervenes, and the pain and frequency of micturition, despite the catheter, becomes intolerable, what operative measures are at the disposal of the surgeon?

(1,) The passage of the catheter may be facilitated by a permanent perineal opening (Whitehead's method). Six inches of sensitive urethra are thus saved from the irritation of the instrument, and the bladder is rendered more readily accessible and is more easily washed out.

(2,) Or the bladder may be relieved by permanent suprapubic drainage, as recommended by Sir Henry Thompson, the wound being fitted with an apparatus to conduct the urine into a urinal.

(3,) Or an artificial suprapubic urethra may be created (Hunter McGuire's operation). "The suprapubic opening *into the bladder* is made as low down on its anterior wall as possible. A drainage tube

is kept in for a short time. The result is that the patient passes his urine through the artificial urethra thus formed. According to the reports of the operation the artificial urethra does not leak nor does urine dribble away, no matter what the position of the man's body. The urine is retained for several hours, often from four to six, and then passed in a steady stream thrown several feet from the body, the last coming in jets as from the natural outlet. The artificial urethra, or fistula, has the same relation to the bladder that the spout of a coffee-pot has to the pot."

Such operations are often effectual and sufficient. If, however, the surgeon aims at a permanent cure, or if drainage should fail, he must adopt more radical proceedings and remove the obstructing portion of the prostate. What methods are available?

(1,) Urethral prostatotomy, section through the middle lobe or bar by means of an urethral instrument; (2,) Urethral prostatectomy (Mercier's operation), removal of part of the obstructing lobe through the urethra; (3,) Galvano-caustic prostatectomy (Bottini's operation), also performed through the urethra; (4,) Perineal prostatotomy (Harrison's operation), median perineal section, with division of the floor of the prostate and subsequent drainage; (5,) Perineal prostatectomy, removal of the salient portions of the gland through the same route; (6,) Suprapubic prostatectomy (McGill's operation).

Which of these three routes—the Urethral, Perineal, or Suprapubic should be chosen?—It is generally conceded that the treatment to be effectual should (1,) For a time thoroughly drain the bladder; and (2,) Permanently remove the cause of the obstruction.

The urethral route is now judged to be in every way unsatisfactory. There are few if any cases recorded in which the operation has proved satisfactory by this route, neither can the obstruction be thoroughly removed, nor the bladder subsequently drained.

Which then is the better route, the Perineal or the Suprapubic?—The greater security afforded by the improved method of suprapubic cystotomy, the successful results of the innovator Mr. McGill, corroborated by others, have enlisted a feeling in the profession strongly in favour of the high operation It is moreover contended that by the latter route: (*a*,) Enucleation of the gland pieces can be performed with greater precision, and completed with greater certainty; (*b*,) complete and most efficient drainage is ensured; (*c*,) the high operation is more generally applicable and is equally safe.

There is much to be said in favour of the perineal route, and the final decision must at present be left to time, increased experience, and more certain diagnosis of the exact condition of the intra-vesical growth.

There are difficulties in the way of estimating accurately the amount of the gland which will have to be removed in order to cure the patient. Greater precision has been lately obtainable by means of the incandescent-lamp cystoscope, aided by Mercier's rectangular sound, or Gouley's cysto-pylometer (a modification of Mercier's instrument, which resembles a lithotrite). Doubtless, in the future, each variety of intra-vesical growth will be approached by the route indicated by experience rather than by fashion, the pedunculated median lobe being attacked from the perineum, whilst more extensive removal will demand, as in the case of multiple or extensive vesical tumours, the greater freedom and precision afforded by the high operation.

Mr. McGill lays down a few special points about the technique of suprapubic prostatectomy which are valuable: (1,) The quantity of water injected into the rectal bag, especially in cases where the prostate is abnormally hard, should be smaller than is usually recommended. In one case there was profuse rectal hæmorrhage, only stopped with considerable difficulty. In another there was considerable ecchymosis and abrasion of the mucous membrane of the rectum, and in another case of lithotomy hæmorrhage occurred. Each case must be decided on its merits, but six or ten ounces is usually sufficient; (2,) The bladder should be irrigated till the antiseptic solution used is perfectly clear. The quantity left in the bladder varies much from ten to twenty or more ounces. The hand placed on the hypogastrium will show when the distension is sufficient; (3,) In cases where the bladder is contracted with thick non-distensible walls, it will usually be inadvisable to perform this operation; (4,) It is better to leave a catheter in the bladder till its cavity is opened, as it is a guide that expedites the operation. Care must be taken not to hook the peritoneal fold (superior false ligament) into the wound with the point of the instrument; (5,) The linea alba is best divided by incising it immediately above the symphysis, and then dividing it upwards on a director; (6,) Care must be taken to secure the bladder before proceeding to remove the prostate. This is best done by inserting two sutures through each lip of the bladder wound, and fastening it securely to the deeper part of the abdominal wall. When the operation is completed, a third suture passed through the lower angle of the wound is an additional security against urinary extravasation into the retro-pubic space; (7,) The prostate should be removed as far as possible by enucleation with the finger, and not by cutting. The mucous membrane over the projecting portion having been snipped through, the rest of the operation is completed with finger and forceps.

In this way excessive hæmorrhage is prevented. A pedunculated middle lobe can, however, be removed by cutting through its base. Hæmorrhage is best arrested by irrigation with water so hot as to make it unpleasant for the hand ; (8,) A large tube should be inserted into the bladder, and the wound united above the tube, by a deep and superficial row of sutures. The tube is to be removed in forty-eight hours ; (9,) The after treatment consists in keeping the parts clean, and washing the bladder and the wound—in exceptional cases—with a **Boracic Solution.**

What are the unequivocal results obtained by Mr. McGill and his colleagues at Leeds?—Out of ten cases eight have continued well, only one requiring the passage of a catheter, and that after excessive drinking. In one case the operation was, owing to the extreme hardness of the prostate, most unsatisfactorily completed ; suprapubic drainage was accordingly adopted but with little, if any, relief. In another case death occurred ten months after the operation. Particular attention is drawn to six patients in all of whom the prostatic retention was of long standing, and in all of whom the bladder has since the operation been able to expel its contents.

Brilliant as this last result is, it is not always obtainable : thus, Dr. Meinhart Schmidt, of Cuxhaven, details the clinical history of a man, aged fifty-two, who had suffered for three years with chronic cystitis due to an enlarged prostate. Suprapubic cystotomy was performed, small calculi were removed, and the middle lobe of the prostate excised. Smart hæmorrhage ensued. There was no relief to the bladder symptoms. Median perineal cystotomy was therefore performed, and a permanent opening made, the patient carrying a permanent soft catheter of large size in his urethra, with benefit.

Mr. Buxton Browne believes that in many cases of advanced prostatic disease, the sufferings of the patient are not due so much to cystitis as to an intensely irritating, prostatic, intra-vesical growth. He reports a very successful suprapubic removal of four ounces of obstructing gland from a gentleman, aged eighty-three.

Mr. Arbuthnot Lane in recording another case of suprapubic prostatectomy, makes the following very suggestive remarks : "Although such growths are when examined in section apparently but slightly vascular, it is not unlikely that they are subject to considerable variations in siz . Though the mass removed in this instance was kept in a piece of lint moistened with glycerine and water, and was enclosed in gutta-percha, yet the following day it was found to have diminished in bulk by at least a third, the same congestion or erection accounts for the suddenness of the onset of retention, and

for the excessive hæmorrhage which took place from its surface before the patient was operated on."

REFERENCES.—McGill, "Clin. Soc.," Lond., Nov. 11, 1887; Belfield, "New York Med. Rec.," Mar. 10, 1888; A. F. McGill, "Lancet," Aug. 24, 1889, also "Illust. Med. News," Sept. 21, 1889, p. 280: Whitehead, "Lancet," Mar. 9, 1889, also "Brit. Med. Jour.," April 13, 1889; Mayo Robson, "Brit. Med. Jour.," Mar. 9, 1889, p. 520; Atkinson, "Brit. Med. Jour.," April 28, 1888; Arbuthnot Lane, "Lancet," April 27, 1889, p. 836; Buxton Browne, "Lancet," 1889, 987, pt. i.; Cabot, "Jour. Cut and Geniti Urin. Dis.," Jan., 1888, also "Boston Med. and Surg. Jour.," Mar. 7, 1889; Watson, "Lancet," Mar., 1889, p. 582; Schmidt, "Deut. Zeit. für Chir.," 1888, Bd. 28, heft 4 and 5; Webb, "Med. News," Jan. 19, 1889, p. 69; Freeman, "New York Med. Jour.," Dec. 8, 1888.

Synopsis.—(Vol. 1889, p. 405.) **Quinine**, in decided doses, with **Dover's Powder**, for engorged conditions following exposure to cold; also **Ergot**, ℥xxx, every two or three hours; in chronically inflamed conditions **Soda Salicylate**, grs. x to xx.

PRURIGO AND PRURITUS. *W. Allan Jamieson, M.D.*

To relieve the itching of hæmorrhoidal affections, pruritus ani, pruritus senilis, etc., wash the part with lukewarm water and good soap; then rub in **Lanolin** in the following combination :—

℞ Lanolin Puriss. 30 parts | Vaselini, Olei Olivæ āā 20 parts

When the itching about the anus is severe, **Cocaine** may be added thus :—

℞ Cocainæ Hydrochl. $\frac{1}{10}$ to $\frac{1}{5}$ part | Vaselini, Olei Olivæ āā 20 parts
Lanolin Puriss. 30 parts |

The addition of 10 per cent. of **Flowers of Sulphur** has proved useful. ("Med. News," Oct. 20th, p. 448.)

Menthol is recommended by Saalfeld, of Berlin, in the "Deut. Med. Woch.," as exceedingly beneficial in cases of pruritus of various kinds. He prescribes it either as a wash or as a salve, the formulæ being :—

℞ Menthol 22—27 grs. | Spirit Vin. Rect. ℥iss

℞ Menthol 37 grs. | Lanolin Ad. ℥iss
Ol. Olivarum ʒij—ʒiij |

Both preparations have done him excellent service in urticaria, pruritus cutaneus, and pruritus senilis. A case of intolerable itching consecutive to otherwise successfully treated scabies was perfectly cured by applications of the following ointment :—

℞ Menthol 48 gr. | Ungt. Wilson (ung. zn. benz.)
Bals. Peruv. 90 gr. | Lanolin pur. āā ad. ʒij

M. f. Ungt.

Menthol as a 10 to 15 per cent. ointment proved likewise very valuable in chronic eczema, even in quite inveterate cases. ("Glasgow Med. Jour.," Feb. 1889, p. 159.)

Synopsis.—(Vol. 1889, p. 406.) **Cannabis Indica**, ♏x t.d., increased up to ♏xx or xxx, well diluted, taken after meals; **Tinct. of Gelsemium**, ♏x, half hourly, until ℥j is taken; **Nitrite of Pilocarpine**, gr. ⅙, subcutaneously at night, and when wheals appear, **Atrop. Sulph.**, gr. $\frac{1}{100}$, in pill, at bed time. *In Pruritus Senilis*, **Sulphate of Potassium Baths**, and 1 or 2% **Carbolic Acid** solution dabbed on the spots. In pruritus of genitals bathe with ℞ Carbolate of Sodium, xxv grammes; Cologne Water, lxxv grammes; Glycerine, c grammes; Water, ccc grammes; and use compresses soaked in the following, ℞, Aq. Dest., ccc grammes; Alcohol, c grammes; Cocainæ Hydrochlor., lxxv centigrammes. If patient scratches unconsciously during the night, use as paint, ℞, Ammoniate of Mercury, j gramme; Oxide of Zinc, iv grammes; White Vaseline, xl grammes; Cocaine, xxv centigrammes, M.; or apply ℞ Cocaine, grs. xv; Aq. Dest. q.s., Lanolin, ℥ss, M.; bathing in the morning with Lot. Hydrarg. Nigra. Painting with **Tinct. Benzoini Comp.** nightly. *For Pruritus Ani*, **Ammoniated Mercury**, grs. xx; **Adip. Benzoat.**, ℥j, M., or use the **Yellow Oxide** of similar strength, adding **Carbolic Acid**, gr. x, and **Creasote**, ♏xv, or **Camphor**, ℥ss. A suppository at bed time of **Ext. Belladonn.**, gr. ss. to j, with **Morphia**; **Salicylate of Soda**; **Peppermint Water**, *locally*; **Continuous Current** has cured pruritus vulvæ. **Ol. Menth. Pip.** as paint (59).

PSILOSIS OR SPRUE.

Synopsis.—(Vol. 1889, p. 411.) Small doses of **Rhubarb** and **Epsom Salts**, sometimes benefited; weak astringent lotions and gentle application of **Nitrate of Silver** for the lesions and erosions in the mouth and tongue.

PSORIASIS. *W. Allan Jamieson, M.D.*

Barduzzi ("Gaz. di Ospid.," 1889) corroborates the experience of Haslund and others as to the value of **Iodide of Potassium**, administered in large doses. In three diffuse, universal cases of very inveterate character, which had been treated with very transient success by all the usual remedies, he obtained results from iodide of potassium which he never hoped to get. In none of the cases was the amount larger than 105 grains daily.

Anthrarobin, though less active than chrysarobin, and staining the skin and linen as intensely, does not cause so much irritation, and, in particular, evokes no erythema. The skin of the parts affected should be washed and scrubbed with a nail brush and hot water, with the over-fatty **Potash Soap** made by Douglas, of Eimsbüttel, then dried, and a 10 or 20 per cent. **Tincture of Anthrarobin** painted on, or an ointment of the same strength made with vaseline rubbed in. The washing and painting or inunction should be repeated daily.

Hutchinson's favourite prescription is:—

℞ Acid Chrysophanic	gr. x	Hyd. Ammon.	gr. x
Liq. Carbonis Deterg.	♏x	Adipis Benz.	℥j

The patient is instructed to remove all scales as much as possible, either by washing or a warm bath, and then to spend half-an-hour (before a fire, if the room be cold) in rubbing this ointment into all patches. It is better to leave the ointment on all night, but if this is, for any reason, too disagreeable, it may be wiped, not washed, off. In the morning a bath with soap is taken. In most cases he prescribes **Arsenic** along with the local treatment, but relies much more on the latter. ("Arch. of Surg.," No. 1, 1889.)

In some cases the patient has not the means or time to resort to baths for the removal of the scales. For this purpose, as a simple and efficacious means of doing this, within the reach of all, the following ointment is to be used twice daily :—

℞ Ammon. Carbonat.	10·0	Cerati Galeni	50·0
Lanolini	25·0		

This ointment does not produce any pain, and causes the scales to disappear, leaving a smooth red surface, ready for the application of the agents to cure the psoriasis. ("Jour. of Cut. and Gen.-Urin. Dis.," 1888.)

Hydroxylamin seems from the researches of Eichhoff and Fabry to be as active as chrysarobin, and does not stain the clothes. But it has toxic qualities which render caution necessary in using it. A solution in spirit and glycerine of 1 in 1000 was employed at first; but Eichhoff, after a more extended trial, finds that it can be safely made into a soap in the proportion of 3 per cent. This he calls over-fatty hydroxylamin soap, and it is made by Douglas, of Eimsbüttel. He rubs the soap in three times a day, allowing the lather to remain and dry, and, when possible, he covers up with gutta-percha tissue. ("Monat. für Prakt. Derm.," Erganz. Heft, 1889.)

In spite of all new forms of treatment introduced from time to time for the cure of psoriasis (some of which have their special application for certain cases), Vidal believes that for the generality of cases we find in the **Oil of Cade** a superiority which forces us to come back to it again and again. By its use it would appear that recurrences are less frequent. The following formula is given :—

℞ Amyli Glycerolis	100·0	Olei Cadini	100·0
Saponis Mollis	5·0		

This makes a soap much more easy of application than the oil of cade alone. It should be applied each night, and a flannel dress worn, which is only changed at long intervals. In the morning a bath with tar soap is to be taken, and, if desirable, the odour of the tarry preparation is removed with some perfume.

Synopsis.—(Vol. 1889, p. 413.) **Arsenic,** subcutaneously, ♏x, increased to xx (if well borne) injected into buttock after freezing skin; **Liq. Arseni-**

calis; Liq. Sod. Arseniatis, or the Asiatic Pill; Tinct. Lupuli., ℥ss. doses, seem to assist toleration of arsenic. Alkalies; Carbolic Acid; Tar; Phosphorus; Copaiba; Ol. Morrh.; Carbonate of Ammonia; Turpentine, ℥x t.d.s., post. cib., and increased to ℥xxx; Cantharides; Vin. Antimon. Tart., ℥v to x; Chrysarobin. *Locally*, ℞ Glyceride of Starch, c parts; Green Soap, v parts; Oil of Cade, c parts, M., rubbed in every morning. Chrysarobin, 10%, dissolved in 10% Gutta Percha solution in Chloroform; to be painted on once a week. ℞, Chrysarobin, grs. x; Lanolin, ℥j; Pyrogallic Acid. ℥ss. to ij in ℥ij; Flexible Collodion, with Salicylic Acid, ℥ss; Ung. Picis Liq.; Thymol, grs. xv to ℥iij to the ℥j as ointment or lotion; Turpentine, pure or with Olive Oil; Alkaline Baths, *e.g.*, Pot. Carb., ℥ij or iij to xxx gallons of water at a temperature of 95° or 98°, useful when eruption is widely spread and not acute. Mineral Waters of Buxton, Strathpeffer, Harrogate, Bath, Kreuznach, Aix-la-Chapelle, and Leuk. Anthrarobin, 10 or 20% ointment (p. 14); Delphinium Staphisagria Seeds (p. 37).

PTOMAINES. *F. de Havilland Hall, M.D.*

What are Ptomaines?—The name ptomaine (πτωμα, a corpse) has been given to the alkaloids furnished by putrefaction; the discovery of these alkaloids goes back to the year 1872. In that year Selmi communicated the result of his first researches by the announcement that he had found in the stomachs of persons that had died a natural death, certain substances similar to the vegetable alkaloids, and which were neither creatine nor creatinine. The discovery of ptomaines is of great importance from a medico-legal point of view. It was formerly believed that alkaloids found in the viscera of bodies under inspection must have been criminally introduced into the digestive tube to cause the death of the person, and the diagnosis of homicidal poisoning was often rendered in consequence of such findings. Putrefied fish and cheese both contain toxic alkaloids. Stomach derangement, intestinal troubles and even fatal symptoms which often result from the ingestion of putrefied food, have for their sole cause the presence in the digestive tube of these alkaloids. Ptomaines are diamines belonging to the fatty series; they are oily alkaline liquids, which exactly saturate strong acids, thus constituting crystallized salts. (See "Leucomaines.")

REFERENCE.—Dujardin-Beaumetz, "Therap. Gaz.," Nov. 15, 1888.

PUERPERAL FEVER. *A. H. N. Lewers, M.D.*

Is Puerperal Fever a Preventible Disease?—Dr. Cullingworth delivered an admirable address on this subject at St. Thomas's Hospital on the opening of the winter session in 1888. The essential points insisted on in his lecture are :—

(1,) That the utmost pains should be taken to ensure perfect cleanliness in the surgical sense of the hands, finger-nails, and of all instruments or appliances that come in contact with the genital passages. In cleansing the hands and nails the use of a nail brush is essential.

(2,) The best antiseptic known at present is **Corrosive Sublimate Solution.** This should be used of the strength 1 in 1000, and the hands, instruments, etc., should be thoroughly soaked in it before touching the patient.

(3,) As a lubricant for the examining finger a solution of **Corrosive Sublimate** in **Glycerine,** 1 in 1000, is the best.

(4,) The antiseptic may be conveniently carried in the form of a powder made as follows: Corrosive sublimate, 10 grains; tartaric acid, 50 grains (to give bulk to the powder and lessen the chance of some of the mercury being lost by precipitation), and 1 grain of cochineal, to give colour to the solution and prevent it being mistaken for anything else.

All the best authorities will agree with the author in recommending rational prophylaxis of this kind. It cannot be too much insisted on that, as regards puerperal fever, prevention is not only "better than cure," but is practically "the only cure."

The so-called "autogenetic" puerperal fever is of the nature of septicæmia, poisoning with the chemical products of putrefaction. This occurs in puerperal women when some clot or piece of placenta has been retained and undergoes decomposition.

In connection with the subject of the preventive treatment of puerperal fever, it is well to remember that personal disease in the accoucheur, such as rhinorrhœa or discharges from the ear, or bad teeth, may be the cause of septic infection. Mr. Hewetson, of Leeds, has recently reminded us of this. Curiously, as this is going to press, several deaths have occurred from a cause of this kind in the practice of a midwife at Limehouse, the cause in this case being that she had tertiary disease of the nasal passages, with the presence of a piece of dead bone.

Even in such cases, however, the probability is that infection is conveyed by the fingers, which have previously been fouled by the discharge; and probably, if the fingers and nails had been thoroughly washed, as previously directed, and dipped in corrosive sublimate solution, no infection would have resulted.

REFERENCES.—Cullingworth, "Brit. Med. Jour.," Oct. 6, 1888; Hewetson, "Lancet," Nov. 24, 1888.

Synopsis.—(Vol. 1889, p. 419.) **Salicyiate of Soda,** grs. vijss. hourly, and raised if necessary to grs. xv hourly, with use of **Alcohol** in puerperal sepsis.

PULMONARY GANGRENE.

Frank J. Wethered, M.D.

Treatment by Incision and Drainage.—Dr. Pasteur records a case of pulmonary gangrene treated by operation in a boy aged seven

which, however, proved fatal. The indications for surgical interference were sufficiently clear, viz., imperfect communication of the gangrenous area with the bronchi, failure of expectant treatment, and signs of a cavity in an accessible situation. The amount of repair which took place under unfavourable circumstances was very encouraging. An earlier operation might have saved the life of the patient.

REFERENCE.—Pasteur, "Lancet," Oct. 20, 1889.

PURPURA.

Synopsis.—(Vol. 1889, p. 419.) **Rest, Astringents; Ergot,** by mouth, or **Ergotine,** subcutaneously; **Turpentine; Iron; Quinine; Faradisation.** ℞ Ac. Phosph. dil, gtt. x; Strychniæ, Sulph., gr. $\frac{1}{60}$ in water, t.d.s.; also Fluid Extract of Witchhazel, gtt. x to xxx t.d. **Geranium Maculatum,** grs. x to xl (p. 42).

PYO-SALPINX. (See "Uterine Appendages.")

RABIES. *By Charles L. Dana, M.D., New York.*

A good many criticisms have been made upon the value of Pasteur's method of inoculation against hydrophobia. In the writer's opinion, however, this method has been legitimately worked out, and is solidly established as a sound prophylactic procedure. It would be a waste of time, therefore, to answer the numerous non-expert criticisms which are still being made.

An interesting case of rabies is reported by Prof. Jubini, in which the pharyngeal spasms and thirst of the patient were allayed by pencilling the throat with a 5 per cent. solution of **Cocaine.** The patient finally died of the disease. ("Arch. italiano per le mal. nervos.," &c., 1888, xxv., p. 405.)

RAYNAUD'S DISEASE. *F. de Havilland Hall, M.D.*

What is Raynaud's Disease? It has been defined to be a local asphyxia with symmetrical gangrene of the extremities. The chief signs and symptoms of this affection are: Black patches distributed symmetrically over the body, generally confined to the extremities; the affected parts are cold to the touch, and the patient complains that they are cold and painful; the black patches may last only a short time, or they may persist and finally become necrosed. Paroxysmal hæmatinuria is sometimes associated with the disease.

Two or three stages may be distinguished in an attack. At first the fingers have simply a "dead" appearance, being pallid and cold. Pain, often of an intense kind, is present; but along with this there may be numbness and other perverted sensations. This stage represents the *syncope locale* of Raynaud and is considered to be due to arrest of the blood supply from spasm of the arteries. These symptoms may pass off and the affected parts return to their normal condition, or

further changes may take place. As a result of these vascular changes the part becomes swollen and livid, due to engorgement with venous blood *(asphyxie locale)*. The symptoms may still pass off or they may increase, and, with or without a further state of erythematous change, go on to gangrene.

As regards the pathology of the disease there is a difference of opinion as to whether the neuritis and degeneration found in the nerves are the cause of the disease, or a secondary result of it. Cold is an important etiological factor in the disease, as the greater number of the cases occur in winter and cold weather, and an attack can be determined in those liable to the disease by exposure to cold.

REFERENCES.—Tannahill, "Glasgow Med. Jour.," Dec. 1888; Bland, "Lancet," April 27, 1889; Affleck, "Brit. Med. Jour.," Dec. 8, 1888.

RETINA, DETACHED. *W. Lang, F.R.C.S.*

Galezowski has obtained fifteen cures in seven hundred and eighty-four cases of detachment of retina. In six cases where he employed aspiration and suture in the sclerotic he obtained two cures.

Hæmorrhages into Vitreous.—Zieminski reiterates the statement that large hæmorrhages into the vitreous are chiefly due to retention and putrid decomposition of the fæces, giving rise to a change in the blood, Flint's scoretæmia or auto-intoxication.

In fifteen cases of detachment of retina and blindness in one eye, Bellremieux performed an iridectomy in the second eye when threatening symptoms arose, with the result that up to the time of writing no detachment had occurred. In thirty-seven cases of progressive myopia, with diminution of vision and opacities of the vitreous, the iridectomy produced a marked improvement of the condition.

Schöler has devised quite a new treatment for detached retina, which has given some good results in his hands. It consists in injecting 2 to 4 drops of **Tincture of Iodine** into the vitreous cavity, which he does in the following manner: The conjunctiva is incised, by preference over the upper part of the globe, the sclerotic exposed, and a small gold cannula with a sharp steel point passed through the sclerotic and detached retina into the vitreous cavity, and the iodine slowly injected from the syringe attached to the cannula. After the injection **Atropine** was instilled and cold compresses applied, the patient was kept quietly in bed for one or two weeks on a milk diet. To procure a more rapid absorption of the ensuing vitreous opacities, Schöler injected a solution of **Biniodide of Mercury**, 1 per cent., and **Iodide of Potassium**, 10 per cent., into the muscles of the back,

preceded by an injection of **Morphia**. The intention is to produce an inflammatory choroido-retinitis, with adhesions between retina and choroid, which will restore the retina to its normal position.

Synopsis.—(Vol. 1889, p. 422.) Massage of eye or puncture of anterior chamber for embolism of retinal artery.

RHEUMATISM, ACUTE. *F. de Havilland Hall, M.D.*

Dr. W. M. Maccall sums up the value of the treatment by the salicyl compounds under the following headings: (1,) In relieving pain and lessening fever in acute rheumatism, the salicyl treatment is undoubtedly the most effective known; (2,) The salicylates do not prevent the rare complication of hyperpyrexia, and are absolutely useless in its treatment; (3,) It is doubtful if they prevent endocardial or pericardial troubles, the percentage remaining about the same (50 per cent.) since the salicyl treatment as before. They seem to have no influence in curing these troubles when they occur; (4,) There is no proof that the salicylates prevent relapse; (5,) It is not proved that the salicylates lessen the duration of the disease, nor that they prevent anæmia. With regard to the particular form of the remedy, most writers recommend, and Dr. Maccall agrees with them, **Salicylate of Soda** in 20-grain doses at first every hour for three or four hours, according to circumstances. It should be continued in diminishing doses for at least eight or ten days after all pain and pyrexia have ceased, and in most cases should be followed by iron. **Salicylic Acid**, **Salicin,** and **Salol** may be tried in exceptional cases where the soda salt is not well borne. In young children, **Antipyrin** may be substituted with advantage. In convalescence, Sir A. Garrod's **Alkaline** mixture, followed by **Iron,** is advised; and if any joint remained stiff or swollen, blistering or painting with **Iodine** is useful.

Dr. Lauriston Shaw draws attention to the occurrence of *hæmorrhage* in salicylism during the treatment of acute rheumatism. He is of opinion that the hæmorrhage is due to some chemical or physical change in the blood, which makes it more readily transude through the capillaries, or else to some secondary change in the walls of the vessels themselves. In addition to epistaxis, he records cases of retinal hæmorrhage, bleeding from the gums and hæmaturia. In all the cases that Dr. Shaw has observed the hæmorrhage has been preceded by the symptoms usually indicative of too large a dose. The practical conclusion is, that when these symptoms occur, either the dose of the salicylate must be decreased, or the drug discontinued altogether, so as to prevent the occurrence of a loss of blood which the patient can so ill afford.

Prof. R. de Tullio, as a result of the experience obtained from the employment of **Antipyrin** in twelve cases of rheumatism, has found that, so far from benefiting the patient, it is positively injurious. It is difficult to reconcile this view with the teachings of Fraenkel, Sée, Dujardin-Beaumetz and others, who have claimed that antipyrin is a specific for acute articular rheumatism, and that at the same time it prevents the cardiac complications so common in this affection.

Messrs. Martin and Goodwin have found **Cascara Sagrada,** both in combination with the salicylate of sodium and also alone, of great value in the treatment of acute rheumatism.

TREATMENT BY ELECTRICITY.—Among the disorders which are benefited by electricity are subacute changes in or about the joints, of rheumatic origin. Exudation and pain may be made to disappear, and the normal mobility of the joints restored. Erb quotes many authorities, and cites his own personal experience to illustrate the practical benefit of electricity in various forms of arthritis.

REFERENCES.—Maccall, "Brit. Med. Jour.," May 4, 1889; Shaw, "Lancet," Jan. 19, 1889; De Tullio, "Bull. Gén. de Thérap.," Sept. 15, 1888; Goodwin, "Therap. Gaz.," Nov. 15, 1888; "Boston Med. and Surg. Jour.," vol. cxix., No. 5 p. 101.

Synopsis.—(Vol. 1888.) **Acetanilide** (p. 3); **Betol** (p. 23); **Caulophyllum** (p. 33); **Hydrochinon** (p. 64); **Ichthyol** (p. 65); **Phytolacca** (p. 82); **Salol** (p. 89).

(Vol. 1889, p. 425.) **Tartar Emetic,** pushed even to vomiting in cases where pain has gone from joints but high temperature persists. If temperature is but slightly reduced under **Salicylates, Hydrobromate of Quinine,** grs. iv 6tus. hor. **Tinct. Spigelia,** ♏j to iij, frequently when pain is very sharp and neuralgic. Pain in acute stage is much relieved by compress, saturated with the following lotion, ℞ Tinct. Verat. Alb., ʒij; Potass. Carb., ʒj; Aq. ad., ʒiv, M. Ft. Lot.; Salol and Betol probably act like Salicylic Acid. **Cold Bath** or **Cold Pack. Amylene Hydrate,** 3·5 grammes, as hypnotic (p. 13).

RHEUMATISM, Muscular.

Synopsis.—(Vol. 1888). **Oil of Winter Green,** for gonorrhœal rheumatism (p. 437). **Caulophyllum** (p. 33); **Eulyptol** (p. 50); **Ichthyol** (p. 65); **Sodium Iodide** (p. 66); **Rhus** (p. 88). *Externally:* **Acalypha** (p. 1); **Rhus** (p. 88).

RHEUMATISM AND GOUT (Chronic forms of).

Synopsis. (Vol. 1889, p. 427.)—**Massage;** application of **Cold Water** or **Alkaline Compresses; Salicylate of Soda, Guaiacum, Lithia, Bryonia, Rhus,** to control inflammatory conditions. In cases of low vitality, with deposit of urate of soda, **Iodide of Arsenic, Phosphorus, Saccharated Carbonate of Iron,** as tonics; the continued current when there is decided arthritis; interrupted current when muscular weakness persists after subsidence of inflammation; also Ling's method. When liver is sluggish and engorged **Podophyllin** and **Belladonna,** āā gr. ½, in pill, continued for from one to three weeks. In plethoric cases **Carlsbad Salts,** followed by **Iron,** in free

dilution, and **Tinct. Hamamelis**, ♏x, is often useful. Vigorous exercise; Turkish, Russian, and Lamp Baths, followed by spray gradually reduced to cold. **Cascara Sagrada**, gtt. xvj t.d., in chronic rheumatism (p. 31).

RHINITIS, ATROPHIC. (See "Ozæna.")

RHINITIS (Chronic). *Greville MacDonald, M.D.*

Into all the pathological consequences of this affection it is not proposed to enter, but a few remarks on the diagnosis and treatment of chronic catarrhal rhinitis in the light of recent advances are desirable. For purposes of convenience we may classify the subject as follows:—

A. As affecting chiefly the erectile tissue and inferior turbinal: (1,) With simple vascular tumefaction; (2,) With vascular collapse; (3,) With true hypertrophy and œdema.

B. As affecting the middle turbinal: (1,) Hyperplasia involving the muco-periosteum; (2,) Caries; (3,) Mucous polypus, and cysts.

The fewest words as to subjective symptoms are all that will be required. They are of but small importance from the diagnostic point of view, and seldom do more than point to the bare fact of nose disease. In order of relative importance they stand as follows:— Buccal respiration, snoring, inability to blow through the nose, and the typical buccal speech are found with nasal obstruction; the closed mouth with ozæna, semi-inspissated mucus, etc., point to the reverse condition. The character of the discharge is of importance only when, being purulent, it points to graver changes than those of simple inflammation of the mucous membrane; or, when unilateral, it suggests the possibility of disease of one or other of the accessory cavities. Pain is of small import, for, like olfaction, very slight causes may result in serious disturbance. Rarely we find such symptoms as asthma, epilepsy, intellectual ineptitude, the aprosexia of Guye, etc.

A. (1,) Chronic Rhinitis with vascular tumefaction of the erectile tissue, which covers the inferior spongy bone, the floor of the nose, and often extending anteriorly on to the septum, is the persistance of an occasional physiological condition; yet it may lead to actual disease from the nasal stenosis induced. In determining this point it is not enough that the patient declare his nose to be free; we must ascertain the point objectively for ourselves. When in doubt upon this point the use of the naso-manometer will prove useful. Inserting the nose piece into one nostril, and breathing through the other, the dial should not indicate more than one millimetre during quiet inspiration, or two to three mm. during expiration. If more than these numbers are produced there is obstruction in the side through which the patient breathes.

On examining the nose with a Thudichum's speculum, the field appears more or less filled by the swollen inferior turbinal, which, together with the like-conditioned floor and septum, obliterates the inferior meatus, as well as encroaches upon the middle. Tilting the head well back, we may yet perceive the anterior enlargement of the inferior spongy body. The points which distinguish this tumefaction from other morbid conditions are the smooth, uniform, globular surface; the dark rose, rarely grey, colour; and pitting under the probe, the impression being immediately obliterated. If we desire further verification, a 4 or 5 per cent. solution of **Cocaine** causes, in a very few seconds, a shrinking, and ultimately a complete collapse of the erectile tissue. The treatment of this condition is very simple, though needing a little dexterity. In recent cases it may be sufficient to prescribe a simple detergent wash for the nose, *e.g.*, 3 or 4 grains each of **Bicarbonate of Soda** and **Borax**, with a few minims of **Glycerine**, to the ounce of water. This warmed should be sniffed up the nose two or three times a day. The nasal douche is objectionable on many counts, more especially because the high pressure entails some risk of the fluid entering the Eustachian tube. Failing such treatment, and in the way of radical cure, we may have recourse to linear cauterizations of the swollen tissues with the electric cautery, or to a limited use of such caustics as **Chromic** or **Monochloracetic Acids**. The treatment frequently adopted by some specialists of bathing the inferior spongy body with chromic acid is mentioned only to be condemned. Serious toxic symptoms have been thus induced. For linear cauterization we tightly cover a probe point with absorbent cotton wool, saturate it with a small quantity of concentrated solution of one or other acid, and pass it from behind forwards along the swollen tissues. Superfluous acid should be immediately removed by a piece of wool wrapped round a second probe. Or we may pursue a similar course with the incandescent point of the electric cautery. Contiguous surfaces must not be simultaneously attacked, for fear of subsequent union. Repetitions at intervals of a week or so for a few sittings should effect a cure. Such methods may invariably be employed in the absence of acute or subacute inflammation and a profuse discharge. When the affection is accompanied by any of these we may be disappointed with the caustics until the symptoms have been reduced by other means.

(2,) Whenever, in cases where the middle turbinal is normal in size and the olfactory fissure not too wide, we can obtain through the anterior nares a view of the posterior wall of the naso-pharyngeal cavity, we may conclude that the erectile tissue is in a greater or less degree of collapse, which may be temporary or permanent. If the

latter be the case the condition is productive of various symptoms resulting from imperfect moistening of the inspired air. We find, for instance, a tendency to *pharyngitis sicca*: the posterior wall of the naso-pharynx being the first moist surface upon which the dry air impinges, gives up its water and becomes coated with a film of inspissated mucus. Indeed, this condition of the nose is found in most cases of dry pharynx. Next, we never find the nose and pharynx thus affected without more or less laryngitis, a point still more pronounced when there is a *rhinitis sicca*. In fact, this collapse of the erectile tissue may be a symptom of either catarrhal or dry rhinitis, subacute or chronic. When once developed it is little liable to variation or susceptible of treatment. Indeed, it is often a symptom of general anæmia, especially in women with whom the menstrual functions are disturbed. On the contrary, we sometimes find it in individuals—generally women—who are decidedly full-blooded, good livers, and possibly gouty. Such are very prone to suffer from pharyngeal and laryngeal inflammation, for which symptoms relief is generally sought. On making a rhinoscopic examination the observer is struck by the great length of the middle turbinated brought into view. The inferior turbinal has collapsed to such a degree that it is usually spoken of as atrophied. But this is erroneous. The treatment, as has been briefly suggested, consists essentially in building up the constitution and paying the strictest attention to hygienic rules. The menstrual functions, no less than the digestive, must be regulated, and the mind lightened of worries. Change of air is often highly beneficial. One patient living in town will fill out her spongy bodies on going to the sea, while another, residing on the coast, finds the same advantage from proceeding inland. Local treatment is of small avail, though the lotion already mentioned may be of some service. The electric cautery and chemical caustics must be carefully avoided in any case tending to collapse of the erectile tissues.

(3,) Chronic catarrhal rhinitis, with true hypertrophy and œdema of the inferior turbinal, is less common than either of the two preceding. The enlargement of the lower spongy body is apparent enough, though it may assume many forms. The colour is usually of a paler rose than in the spurious form of enlargement just described, and sometimes it presents a grey colour, this depending on the degree of œdema. The striking point of distinction, however, is the largely or finely lobulated character of the enlarged mass. In the latter case it is sometimes described as papillomatous or polypoid degeneration of the inferior turbinal. Neither of these appellations is quite justifiable on pathological grounds. The lobulation is sometimes so minute as to be very

properly called cauliflower. We generally find the whole spongy body enormously enlarged, closely packed into the concavity of the bone, so that both inferior and middle meatus are wholly occluded. On examining the posterior extremity with the laryngeal mirror, we find the body projecting into the post-nasal cavity, and sometimes so large as to interfere seriously with nose breathing. It is usually greyish in colour, but less liable to lobulation, owing to the unconstrained position. Sometimes, however, it is in every respect similar to the anterior enlargement; and when we find it not only lobulated, but also of a deep purple colour, it has rightly been compared to a mulberry in appearance.

To obtain a good view of the naso-pharynx the new self-retaining palate hook, invented by Dr. J. A. White, of Richmond, Va., will prove serviceable (*Fig.* 43). On the stem slides the attachment, which is fixed over the upper lip, and holds the retractor in position. With a slight modification by Mr. Cresswell Baber it is made by Down Bros., Borough, London. It is better borne by the patient than might be anticipated.

Fig. 43.

With this variety of rhinitis we find all the symptoms aggravated to an extraordinary degree, while it is especially prone to produce all the gravest consequences of nasal and Eustachian obstruction. The treatment consists in the timely removal of the hypertrophies by surgical means; and, in view of the hæmorrhage attendant upon opening such large venous sinuses as those contained in the nasal erectile tissues, the snare is the safest as well as the handiest instrument. But even when working this instrument with every care and extreme slowness, there may be troublesome secondary bleeding, and perhaps it is always preferable to employ the incandescent snare, although this doubtless induces more inflammatory trouble in the immediate neighbourhood. For removing the posterior enlargements it may be necessary to insert the forefinger of the left hand in the naso-pharynx, wherewith to hitch the noose over the tumour. The removal of all the pendulous cauliflower masses sometimes necessarily results in the complete removal of these portions of mucous membrane which project from the free border of the bone. The method recently advocated by Spencer Watson of

cutting away the hypertrophied tissue with a ring knife is obviously open to grave objection. The treatment above advocated is highly satisfactory in every respect.

B. (1,) Chronic catarrhal rhinitis, as affecting the middle turbinal, most frequently exemplifies itself as hyperplasia involving the muco-periosteum. We find the structure more or less, sometimes enormously, enlarged. In lesser cases the changes are confined to the anterior third of the body, while even in the most severe we seldom see any alteration of the portion viewed in the post-rhinal mirror. In more severe cases there is actual and considerable hypertrophy of the bone elements, while in some of these so great is the pressure exerted by the enlarged mass upon the septum as to cause its deflection towards, and encroachment upon, the other side ; consequently, although the affection under consideration conspicuously differs from most inflammatory diseases of the nose in being often unilateral, it is yet productive of considerable mischief in the way of pressure and obstruction in the opposite choana. In this way sometimes severe neuralgia is induced, as well as the more ordinary nasal reflexes, such as sneezing, rhinorrhœa, etc. The affection calls for treatment only where there are obvious symptoms, while the only practical methods of cure are surgical. The hypertrophied mass may be removed with saw, trephine, or snare, but in any case the proceeding is so far serious that we must be prepared for some constitutional reaction. The wound must be assiduously dressed with iodoform or iodol until cicatrization is complete.

(2,) Caries of the middle turbinal or of the ethmoidal cells above is generally suggested by the presence of an unilateral or bilateral purulent, sometimes fœtid discharge. It is frequently associated with empyema of the maxillary sinus and polypus (q. v.); but, in the absence of a purulent discharge, we may be satisfied that there can be no bone disease, notwithstanding the authoritative statements of some specialists to the contrary. The diagnosis can sometimes be verified with the probe, provided we employ a large size and use no force in our attempts to reach the affected bone, for it must be borne in mind that a fine instrument can easily be pushed under the loosely united muco-periosteum, and that the bone beneath, even when quite healthy, readily yields an impression singularly like that of exposed osseous tissue. The treatment is not very satisfactory, seeing that the disease so frequently lies beyond the ordinary methods of surgery. In some instances it may be admissible to remove large portions of the middle turbinal, if only to render efficient drainage possible. When the probe can reach the actual seat of disease much assistance may be gained from scraping the carious spots with a sharp spoon, and subsequently

packing with iodoform wool (fifty per cent.) When the antrum is filled with pus the first essential is to evacuate this cavity (*vide* "Empyema of the Antrum"). If there are polyps they must be extirpated as far as possible.

(3,) The pathological conditions involved in the transition from simple inflammatory conditions to those productive of mucous polypi and cysts are too intricate to admit of description in this place. Suffice it to insist upon the fact that most authorities now admit the impropriety of considering these neoplasms as myxomata, the typical pathological element of which is never found in nasal polypi. The true explanation of them appears to be found in the special conditions in which the inflammatory products are placed, to wit, being perpetually bathed in mucus. Most polyps may be regarded as simple œdematous granulation tissue, here and there showing imperfect attempts at organization. But in this place it is only sought to point out the relation that polypi bear towards chronic rhinitis in its various forms. Polypi are always situated above the inferior turbinal, never involving that structure; though, to forestall error, it must be admitted that œdematous hypertropy of the erectile tissue not infrequently bears a striking resemblance to mucous polypus. An appreciation, however, of the smooth surface of the latter contrasted with the cauliflower or more coarsely lobulated appearance of the former will prevent all possibility of mistake.

REFERENCES.—Guye, "Deut, Med. Woch.," 1887; MacDonald, "The Respiratory Functions of the Nose," 1889; White, "Jour. of Amer. Med. Asso.," Feb. 1, 1888; Baber, "Brit. Med. Jour.," Jan., 1889; Watson, "Med. Press," Dec., 1888.

RHINITIS, Dry. (See "Ozæna.")

RHINO-SCLEROMA.

Synopsis.—(Vol. 1889, p. 432.) A 2% solution of **Salicylate of Soda** has been injected into the part, and **Salicylic Acid**, grs. x t.d.s., with some advantage.

RICKETS.

This should be treated by food more than by drugs. Far too much dependence is placed on the latter, to the neglect of dietetic treatment. As a rule, children are overdosed and sickened by Parrish's food and cod-liver oil, to the damage of appetite and digestion. Dr. Cheadle finds that he has to stop these things more often than to order them. Parents have come to consider them as almost essential, and children are drugged with them on the least sign of languor or flagging health. But raw meat is better than iron; cream or fresh milk than

cod-liver oil. The diet of a rickety child should be carefully examined to ascertain whether it contains a due proportion of fat, proteid, and salts. A sufficiently close estimate can be made with ease, since the composition of milk and of all foods used for children is accurately known. It will be found that it either is or has been defective, and it should at once be placed at the full standard, so that the amount of animal fat especially is equal to at least one-fourth of the total solids, proteid about one third, the carbohydrates a little over one-third, the salts about one-tenth ; and for a little infant these should be diluted to about the percentage which obtains in human milk. It is not enough to supply fat alone if proteid and salts are likewise deficient. These proportions can often be increased with advantage, care being taken not to overtax the child's digestive powers. A correct diet, with a full amount of the essential elements in digestible form will cure rickets without medicine ; but if cream or good milk cannot be obtained, or does not agree, cod-liver oil may be substituted. **Iron** is a most useful adjunct in many cases, and the salts of lime may be added in the form of **Lacto-phosphate.** With these, sunlight, fresh air, warm clothing, are potent aids, which should not be undervalued ; but an anti-rachitic diet is essential, and without it other hygienic measures are comparatively powerless for good. (Dr. W. B. Cheadle, "Brit. Med. Jour.," Nov. 24th, 1888.)

SALPINGITIS. (See " Uterine Appendages, Diseases of.")

SCABIES.

Synopsis.—(Vol. 1889, p. 436.) ℞ Styracis, ʒij, Bals. Peruviani, ʒss, Ung. Simp. ad. ʒj, M. ; or ℞ β Naphthol, ʒj, Ung. Simp. ad. ʒj to ij, solve; to be rubbed in for four successive nights. ℞ Adipis, 6 parts; Sapo Viridis, 1 parts ; Naphthalin, xv parts; Cret. Alb. Pulv., x parts, M. ℞ Sulph. Sublimat. ʒj, Bals. Peruviani ʒss, Adipis ad ʒj, M. Ft. Ung. ; Ung. Sulphuris, ʒj to the ʒj and Bals. Peruviani added. **Sulphur Bath;** Potass. Sulphid, ʒiv, Aq. 100° Fh. Cxxx ; skin is soaked for a quarter of an hour, then well scrubbed and soaked again for another quarter of an hour. Two baths are required.

SCARLATINA. *Henry Dwight Chapin, M.D., New York*

Dr. Purdy ("British Med. Jour.," Jan. 19, 1889,) advises the treatment of scarlatina by **Mercuric Iodide.** He has tried this treatment in fifty cases with but one death. The temperature fell rapidly, the symptoms improved, and desquamation was slight. The average period of isolation was eighteen days, and there were no lingering sequelæ. The formula used was :—

℞ Liq. Hyd. Perchlor.	ʒj	Syr. simpl. ad.	ʒviij.
Potas. Iodid.	ʒ-s		

Half an ounce to be taken every one, two, or three hours.

Dr. L. Mervin Maus ("Med. Record," June 22nd, 1889,) gives the following rules of corporal disinfection for preventing the spread of scarlatina :—

(1,) Sponge the patient thoroughly, morning and evening, with a tepid solution of corrosive sublimate, 4 to 1,000, as soon as the eruption makes its appearance.

(2,) Wash the hair once daily with a solution of the corrosive sublimate, of the same strength, and also a solution of borax, 1 to 250.

(3,) Disinfect the urine, fæces, and expectoration, also the discharge from the ears and nose, if there be any. A solution of the bichloride, 1 to 1,000, is best for this purpose.

(4,) As soon as the patient is permitted to leave the bed, have the body washed with warm water and soap, then sponged with the 1 to 4,000 bichloride solution, wiped dry, and anointed with the following ointment :—

℞ Sodii Biboratis,		Ol. Gaultheriæ	℥ss.
Zinci Oxidi.	āā ℥iv	Vaseline	℥iv.

The hair should be thoroughly washed with the bichloride and borax solution.

(5,) The patient is then to be enveloped in fresh and clean clothes throughout, and allowed to leave the sick-room if his condition otherwise admits of it.

(6,) The bed linen, soiled clothes, towels, etc., should be placed in a suitable sublimate solution and boiled, and the room well disinfected with sulphur. The sulphur candles are very convenient, and the disinfection should be repeated the second day, as the germs are very tenacious of life.

(7,) Require the nurse or attendant to keep the hair, face, and hands well disinfected during attendance, and to likewise make a complete change in his or her garments on the date of the disinfection of the sick-room.

(8,) Continue the provisions of the third and fourth rules once daily until desquamation is complete.

Other germicides may be used in place of the mercury, and it is probable that other eruptive diseases may likewise be treated with success in a similar manner.

F. de Havilland Hall, M.D.

Dr. Astley Gresswell is of opinion that not a few advantages may be derived from the administration of **Oxygen** in scarlet fever. The oxygenated water is undoubtedly efficient in assuaging the febrile thirst, being taken greedily and subserving several purposes. It reduces nausea, increases the appetite, reduces perhaps the fever, aids

in metabolism, and flushes the renal tubules. Ordinary drinking water will not serve the same purpose, because patients can be induced to take but little. Oxygen gas has proved beneficial in many ways. Hopeless cases were revived by it, and existence was by it occasionally prolonged. In badly nourished convalescents the appetite and the weight were quickly increased by it.

Dr. Shakowski states that he has administered **Salicylic Acid** with the greatest success in one hundred and twenty-five cases of grave scarlatina occurring in children, the mortality being reduced to three and a half per cent. He gives a mixture consisting of 1 part of salicylic acid to 75 parts of water and 30 parts of syrup of orange-peel, a teaspoonful of this being given every hour during the day, and every two hours during the night.

REFERENCES.—Gresswell, "Pract.," Nov., 1888; Purdy, "Brit. Med. Jour.," Jan. 19, 1889; Shakowski, "Rev. Mens. des Mal. de l'Enf.," June, 1889.

Synopsis.—(Vol. 1888, p. 445.) **Condy's Fluid** for mouth and fauces, and **Glycerine** and **Borax** if tongue be dry and denuded. In cervical ulceration **Iodoform** and solution of **Chlorinated Soda**, externally. In scarlatinal rheumatism, **Opium**. For desquamation of feet apply **Salicylic Acid** and **Flexible Collodion**, equal parts.

SCIATICA. *Charles L. Dana, M.D., New York.*

In a paper read before the Philadelphia Neurological Society, Dr. S. Solis-Cohen reported success in a very obstinate case of sciatica by injecting a 1 per cent. solution of **Osmic Acid** into the tissues near the exit of the sciatic nerve. He began by using 10 minims, and increased until he finally gave 30 minims at one injection. The injections were made at first daily, and later three times a week. The treatment lasted about seven weeks.

Osmic acid is the tetroxide of osmium. The following is a convenient formula:—

℞ Osmic Acid	1 part.		Distilled Water	60 parts.
Glycerine	40 parts.			

The use of osmic acid has been pretty generally abandoned on account of the pain and danger of abscesses, etc.

Dr. Austin Flint reports a case of obstinate sciatica cured by enormous doses of **Antifebrin**, viz., 50 grains the first day and 40 grains the second.

The editor of the "Medical Summary," June, 1889, writes enthusiastically of the marvellous effect of hypodermic injections of **Sulphuric Ether** in a case of obstinate sciatica. Several daily injections of 20 to 30 minims were used. It should be remembered that ether so injected may cause neuritis.

Dr. Pemberton Dudley has used **Gnaphalium** in sciatica, and cured more cases with it than with all other remedies put together. Dr. Korndœrfer has also used gnaphalium in sciatica with excellent results. He has usually employed the tincture of the drug.

Gnaphalium or cudweed is an old domestic remedy of no great repute, but claimed by Schœpf to have some anodyne properties.

REFERENCES.—"Medical World," Sept., 1889; "New York Med. Jour.," Dec. 1, 1888; "New York Med. Times."

Synopsis.—(Vol. 1888.) **Aconite** (p. 8); **Drumine** (p. 48); **Methyl** (p. 76); **Phytolacca** (p. 82).

(Vol. 1889, p. 436.) Enveloping the limb in **Flowers** of **Sulphur**. In chronic cases **Croton Oil Pills** and a course of laxatives may cure; **Theine**, gr. ss to iij, hypodermically. ℞ Theine, Sodium Benzoate āā 3j, Sodium Chloride, grs. viij, Distilled Water, 3j, M. For hypodermic use. ℞ Tinct. of Aconite Root, Colchicum Seeds, Belladonna, and Actæa Racemosa, equal parts, vi drops being taken every six hours, until pain is relieved. **Methyl Spray** (p. 54); **Saffrol**, ♏xx, and increased (p. 64).

SCLERATITIS. *W. Lang, F.R.C.S.*

In scleratitis Mortin prescribes **Hot Fomentations**, and a 1 per cent. solution of **Ergotine**, eight or ten drops of which are to be dropped into the eye every day. Internally, every morning a powder of **Rhubarb, Magnesia** and **Carbonate of Soda**, and before each meal **Benzoate of Lithia** or **Soda**. When the disease is stationary he lightly cauterizes the sclerotic with the galvano-cautery at a point opposite the swelling. He repeats this application every few days; meanwhile blistering behind the ears.

The writer finds **Salicylate of Soda** and **Leeches** to the outer canthus to be very efficacious in these cases, where there is a rheumatic history.

SCLERODERMA. *W. Allan Jamieson, M.D.*

This may be of the diffuse, the circumscribed, or the mixed varieties. Friedländer reports a case of the diffuse form cured by daily baths at a temperature of 85 F., each bath lasting for three hours, daily massage of all the indurated parts, inunction with oil every evening, envelopment in flannel at night, the administration of preparations of iron, the use of albuminous food, and free exposure in the open-air by day. ("Arch. für Kinderheil Kunde.")

Synopsis.—(Vol. 1889, p. 437.) Tonics and avoidance of cold; Turkish Baths, Shampooing, Massage, Galvanism, **Lanolin** inunction, and in the localized variety **Compound Salicylic Glycerine Jelly**, is useful.

SCROFULA.

Synopsis.—(Vol. 1889, p. 36.) **Delphinium Consolida** infusion, internally and externally, for scrofulous ulcers.

SCROFULODERMA.

Synopsis.—(Vol. 1889, p. 438.) Ol. Morrh., Iron, Phosphorus, or Iodine. ℞ Phosphori, Ac. Arseniosi, āā gr. $\frac{1}{10}$, Ft. Pil. Dermal Curette, followed by Mercurial Ointments or Lotions; Iodide of Starch Paste or Iodoform. Chaulmoogra Oil in Emulsion, ♏x to xxx, and externally as ointment, j part to iij; 5% solution of Iodoform in Oleic Acid, brushed on two or three times a day, often prevents suppuration.

SCURVY.

Synopsis.—(Vol. 1889.) Geranium Maculatum, gr. x to xl (p. 42); Pulque, ℥j to jss. (p. 63).

SEBORRHŒA OLEOSA.

Synopsis.—(Vol. 1889, p. 438.) Abstinence from alcohol. ℞ Aloin, grs. iij; Zinci Ox., grs. v; Capsici, grs. x; Ext. Gentianæ, gr. l, M. Ft. Pil. in numero xxv, Sig. j q.d., and the following lotion. ℞ Thymol, grs. ij, Chloral Hydratis, grs. xx, Ac. Borici, ℥j, Hamamelis Dest, ℥j, M. Ft. Lotio. In obstinate cases of seborrhœa of the scalp, ℞ Ung. Hyd. Nit, ℥j to iv, Ol. Cadini, ℥j, Ol. Olivæ, ℥ij, Lanolin, ℥iv, M. To be rubbed in every night when the scalp has lost its natural oiliness. ℞ Ac. Tannici, ℥j, Glycerini pur. q.s., Vaselini, ℥j, Ung, Aq. Rosæ, ℥j, M. When hyperæmia exists soothing applications, *e.g.*, ℞ Liq. Plumb. Subacet., ℥ss, Vaselini Alb., ℥j, M., or Naphthol Ointment, grs. xx to the ℥j; or Sulphur Ointment, ℥ss to j to the ℥j; or a mild Resorcin Ointment.

SEMINAL VESICULITIS. *E. Hurry Fenwick, F.R.C.S.*

Mr. Jordan Lloyd draws marked attention to seminal vesiculitis which results usually from gonorrhœa. There is swelling at the base of the bladder, the greater part of which is due to effusion of inflammatory products into the perivesicular connective tissue rather than into the cavity of the vesicle itself, just as in epididymitis the bulk of the enlargement depends upon inflammatory infiltration into the connective tissue between the tubules of the epididymis.

The symptoms of vesicular disease are: Uneasiness about the perineum; painful defecation; frequent and painful micturition or retention; painful emissions at night; bloody semen; persistent gleety discharge.

Zeissl lays stress on one symptom which he asserts belongs exclusively to the disorder, viz.: erections are well-nigh constant, and so painful as to constitute priapism. A rectal examination reveals an elongated swelling beyond the prostate running obliquely upwards and outwards at the side of the base of the bladder, made more evident by passing a metal bougie into the bladder for counter pressure and counter search.

Mr. Lloyd thus describes a case and the treatment: "With a finger in the rectum, I found on the right side a deep-seated, smooth, round, fluctuating swelling, with its longest diameter in the direction of the bowel, and its lower end about one inch and a half from the

anal margin. Pressure on this was painful and gave rise to a desire to micturate. Under chloroform I made a puncture through the perineum, inserting a long-bladed knife about one inch to the right and in front of the anus, and guided by the finger in the rectum entered the blade to the depth of two inches, tapping a cavity containing about four drachms of pus. A finger passed through the wound entered a cavity which lay altogether to the right of the middle line up towards the sides of the pelvis. The cavity was drained with success." (Jordan Lloyd, "Brit. Med. Jour.," April 20, 1889.)

SERO-PNEUMO-THORAX. *Frank J. Wethered, M.D.*

M. Potain has tried in three cases the treatment of sero-pneumo-thorax with intra-pleural injections of **Sterilised Air.** He replaces the fluid as it flows away with an equal volume of purified air obtained by filtration through cotton wool, and its agitation with strong solution of **Carbolic Acid** in a closed vessel, whence it is conducted into the chest by means of tubing and a hollow needle. As much air is pumped into the pleural cavity as serves to maintain the intra-thoracic pressure, before the paracentesis is unchanged. The air is very gradually absorbed, and as this takes place the normal anatomical relations of the thoracic organs are established. M. Potain has had two successful issues in three cases of sero-pneumo-thorax in tuberculosis; the third case died.

REFERENCE.—Botain, "Cent. für Klin. Med.," 1888, No. 27.

SKIN (Action of Sulphuric Acid on the). *Walter Pye, F.R.C.S.*

The best immediate application in cases of burns from sulphuric acid is stated by Ribaud ("Cent. für Klin. Med.," April, 1889) to be large quantities of water; alkaline water is preferable, but the essential point is that the water shall be abundant, and immediately employed. He says that the finger may be held in pure sulphuric acid for two and a half minutes, and then if this is washed off at once with large quantities of water it will be free from any burn.

The action of the acid is not really a burn, but a violent dehydration, therefore speedy dilution and neutralisation are indicated. On the other hand, treatment with oils is hurtful, as thereby heat is generated, and magnesia has no water to give to the acid, and does not neutralise it with any rapidity.

SMALL POX.

Synopsis.—(Vol. 1888.) Tartar Emetic (p. 13).

(Vol. 1889, p. 439.) Acetanilide. ij grammes daily in solution and a tablespoonful given every hour from 10 a.m. to 9 p.m. Calomel in powder either alone or with starch (20 or 30%). dusted on face to prevent pitting.

SNOW BLINDNESS. *W. Lang, F.R.C.S.*

Graddy has been able to observe several cases of snow blindness, and found that the complex symptoms of this disease are due to a superficial sunburn of the cornea and conjunctiva, a condition which leads to photophobia, corneal ulcer, and at times hypopion and panophthalmitis. **Cold Compresses** and **Atropine** soon allay these symptoms in the milder cases.

SPERMATORRHŒA.

Synopsis.—(Vol. 1888, p. 451.) **Cypripedin**, gr. j to ij; **Hamamelis**, Tinct. ♏v to ʒj; **Ichthyol**, gtt. ij to v.

SPINE (Angular Curvature of). *Percy Wilde, M.D.*

In early stages of this disease it is very easy to fit the patient with a poro-plastic felt jacket, but in advanced cases where the angular deformity is already great, as in *Fig.* 44, it is practically impossible to accurately mould the jacket upon the living body. We need in such cases to obtain a solid mould or cast of the trunk upon which the jacket may be at first blocked.

The way in which this may be done without calling in the aid of the professional modeller, is among the numerous practical hints contained in Mr. Walter Pye's new work on "Children's Deformities," and for the benefit of those who do not already possess this most valuable handbook, we quote the directions given.

"By far the readiest way to get the model of the trunk of a patient is to put on a light plaster of Paris case whilst the body is under the conditions of position, etc., in which the model is required to be taken.

"This case is to be put on according to the directions given in Chap. III., and as

Fig. 44.—Angular curvature of spine, severe.

soon as it is set it must be carefully cut down the centre in front with a very sharp knife, care being taken to keep the edges clean cut. The singlet must then be peeled off its inner surface, and the case carefully taken off the patient.

"The next steps consist in joining up the cut in front by passing a roller bandage, or long strips of strapping round the case, and then thoroughly larding the whole of the inside, and the outside at the bottom for about one inch.

"The case is now ready to be used as a mould for the solid cast. As a foundation for this a square piece of 1 or 1½-inch plank, of a sufficient size, with a piece of broom handle fastened upright in its centre (*Fig.* 45,) must be procured. Enough plaster of Paris cream

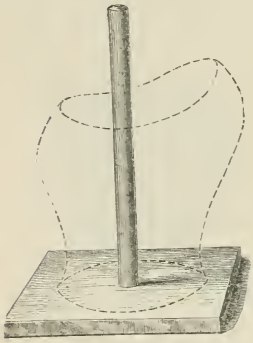


Fig. 45.—Foundation for cast.

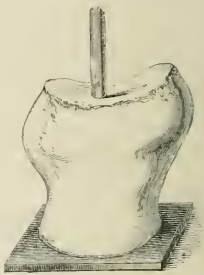


Fig. 46.—Plaster cast.

must now be mixed, and when it is on the point of setting, it must be spread upon the board to the thickness of half an inch, over an area larger than that of the bottom of the case. This latter is then immediately slipped over the top of the pole, and its lower edge is settled into the plaster, care being taken that its middle line coincides with the middle of one of the sides of the board.

"All that is now necessary is to mix a quantity of plaster cream and pour it into the jacket until it is full. As soon as it is set, the case can be taken off and the cast is finished (*Fig.* 46).

"It is sometimes convenient to use an old felt jacket which has been previously fitted, as the mould for a solid cast. In this case it is best to line the inside with paper instead of using grease; the same

plan should be followed with the plaster case, if it is proposed that it should be worn (as it can be) temporarily by the patient until the felt one is ready.

"Having thus procured an insensate and hard cast upon which to work instead of the soft and tender body, it is obvious that not only can more force be applied to urge the felt to follow the curves of the deformity, but that it may be applied when it is in its most pliable condition, which is attained when it is hotter than could well be borne by any patient. *Fig.* 47 represents a patient with well marked angular curvature wearing a jacket which has been thus moulded."

Fig. 47.—Case of angular curvature wearing a jacket.

Synopsis.—(Vol. 1888, p. 453.) Pains of locomotor ataxy relieved by **Ether Spray** or **Ethyl Bromide Spray** over the spinal column, also **Antipyrin**, x gr. doses; in ataxia paraplegia, small doses of **Mercury** and of **Arsenic**. *Night Palsy:* **Bromide of Potassium**; **Calomel** and **Rhubarb**; **Tonics** and **Electricity**. **Acetanilide** (p. 2); **Aconite** (p. 7); **Dioscorea** (p. 46).

(Vol. 1889). **Solanin**, gr. $\frac{1}{32}$ to $\frac{1}{16}$ to remove irritability of spine (p. 67).

SPLEEN (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Splenectomy.—The present position of the operation may be summed up as follows: For traumatic lesions, excision is both safe and justifiable. For primary hypertrophy, for floating spleen, and for malarial enlargement, the operation may be performed if the symptoms are serious and cannot be otherwise removed. If drainage fail to cure cysts of the spleen excision may be performed. If malignant disease be diagnosed sufficiently early, the organ may be removed. Splenectomy for leucocythemic spleen is unjustifiable, all the cases operated on having died.

Asch gives a list of ninety splenectomies, out of which fifty-one operations were pronounced successes.

Wright gives an interesting table of sixty-two cases in which splenectomy had been performed, out of which, only twenty-two recovered. From a case of hypertrophied spleen for which he performed splenectomy, he draws the conclusion, that if after opening the abdomen the spleen be found to be very fixed and to have large attachments to the diaphragm, and if the pedicle be broad and ill-defined, the operation should be abandoned. Lucan suggested ligature of the splenic artery for enlargement of the organ, but the operation has apparently not been performed.

Acupuncture.—At the Congress of the Italian Society of Medicine, held at Rome some months ago, Dr. Feletti related two cases of chronic malarial enlargement of the spleen which he had treated successfully by acupuncture. He used steel needles, such as are used for the electro-puncture of aneurysms. Having first carefully disinfected the needle, he plunged it into the substance of the spleen, leaving it there just long enough to be sure that it was in the right place. The procedure is almost painless. In one of his cases Dr. Feletti had an opportunity of examining the organ after death, which occurred (from tuberculosis) a fortnight after the last puncture. With the naked eye, small brown spots could be seen in the spleen at points corresponding to the punctures. Microscopic sections showed a roughly triangular area with its base towards the capsule, which at that point was broken; this area was occupied by young connective tissue, together with the remains of a blood-clot. In the discussion which took place on Dr. Feletti's paper, Dr. Fazio spoke highly of the results of parenchymatous injections of quinine in similar cases, which combined the mechanical effects of puncture with the medicinal action of the drug.

Dr. Barrallier has recorded two cases of young sailors twenty years of age, both of whom died suddenly of rupture of the spleen during a first and mild attack of ague.

REFERENCES.—Wells, "Brit. Med. Jour.," July 13; 1889; Maccal and Dreschfeld, "Brit. Med. Jour.," July 13, 1889; Maas, "Lancet," Jan. 19, 1889, p. 138; Liebman, "Lo Spermentale," Aug. 18, 1889, p. 121; Fehleisen, "Deut. Med. Woch," No. 49, 1888; Sokoloff, "Annals of Surgery," vol. ii, p. 135, 1889; D'Antona, "Annals of Surgery," vol. ii, p. 299, 1889; Barrallier, "Brit. Med. Jour.," p. 376, vol. i, 1889.

SQUINT. *W. Lang, F.R.C.S.*

All cases of hyperopic squint should at first be treated by **Atropine** for a week, at the end of this time the refraction should be measured, and glasses which fully correct the ametropia ordered— in large

round frames for children for constant use: the atropine should be continued till the patient obtains the glasses from the optician. The angle of deviation of the squinting eye should be taken before the atropine is ordered, and this examination with the perimeter repeated every three months. If the squint diminishes steadily or quickly no operation will be required, but if no improvement takes place, the patient may be operated on at the end of six months.

It is better in all cases to postpone any operation till the patient is eight years old, as by so doing one can ascertain the vision of each eye with greater certainty; and where both eyes see fairly well the patient may be taught to obtain diplopia, so as to assist the operator to obtain an ideal result at one sitting.

Where, however, the squinting eye is unable to fix, such a result cannot be counted on, still, in every case it is worth aiming at. The patient's eyes being under the influence of a 5 per cent. solution of **Cocaine**, the operation decided on beforehand is carried out; the patient directing his gaze at a bright light in the distance is able to guide the surgeon in his final efforts to obtain perfect parallelism by stating the position of the double image, the non-operated-on eye being covered with a red glass. By this means perfect results are often obtained before the patient leaves the operating couch, and thus many months of weary work with a stereoscope are avoided.

De Wecker prefers operating early in permanent squints, and prefers to advance the capsule rather than to divide both recti, by this means he can correct 40° or 50° of squint.

Galezowski relies on the full correction of the ametropia, so long as the child is brought sufficiently early, and thinks the glasses should be worn at least three years before resorting to any operation.

STOMACH (Dilatation of). *F. de Havilland Hall, M.D.*

The treatment of dilatation must of necessity depend upon the cause. If due to pyloric stenosis, only the disturbed chemical processes of digestion can be treated. For this end systematic lavage of the stomach must be employed; the method of carrying this out was fully described in the "Annual" for 1889, p. 262.

In cases of functional dilatation due to atony of the solar plexus, Dr. Baraduc has obtained good results from internal **Electrical** treatment. One terminal of terra-cotta is laid on the epigastrium, and the other of copper, in the form of a short stem, is passed into the stomach in the tube of a stomach-pump, and not allowed to come into contact with the gastric walls, by being kept some two inches above the tip of the tube. Before introducing the tube the patient drinks some mineral water to fill the stomach. The machine should be kept at

work for five or ten minutes, and the tube then withdrawn. External friction with camphorated oil, a spare nitrogenous diet, with a little milk only as fluid, complete the treatment.

Ott recommends in these cases **Massage** and external **Faradization,** one pole being placed over the left hypochondrium, and the other movable from the cardia to the pylorus. The current should be rather strong, and the séance last five minutes.

STOMACH, FOREIGN BODIES IN THE.—*What is the most suitable plan of treatment for foreign bodies in the stomach?*—The answer to this question is extremely simple and very easy to carry out, viz., that the patient's diet should be restricted to potatoes, of which he should take a large amount. Prof. Billroth is of opinion that since the introduction of this procedure, gastrotomy for foreign bodies should become an obsolete operation.

CANCER OF THE STOMACH.—*Is Condurango of any use in the treatment of Carcinoma of the Stomach?*—Riess, from his experience in eighty cases treated with, and in one hundred and sixteen cases treated without, condurango, is in favour of its specific action, and he is of opinion that the lives of many patients had been prolonged by the condurango treatment.

REFERENCES.—Ott, "Deut. Med. Woch."; Baraduc, "Jour. de Méd.," vol. xv., No. 6, 1888, p. 153; "Deut. Med. Zeit.," Jan. 24, 1889; *Ibid.*, March 11, 1889; "Therap. Gaz.," May 15, 1889; "Therap. Gaz.," Nov. 15, 1888; "London Med. Rec.," Aug. 20, 1888.

STOMACH (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

For detailed synopsis of new treatment and references previous to 1889, see "Annual" for 1889. Previous to operating on the stomach, Bazy recommends a preliminary antiseptic treatment by the administration of five grains **Naphthol A, Salicylate of Bismuth** and **Calcined Magnesia** for several days.

During the year several successful cases of Loreta's operation have been reported; a paper by Mr. F. Treves in the "Brit. Med. Jour.," vol. i, 1889, p. 903, gives a complete account of the technique.

On March 17th, Prof. Loreta successfully performed mechanical dilatation of both orifices of the stomach in a man aged forty-eight who had suffered from gastric symptoms for some years.

Gastrostomy was successfully performed early in 1889, by the author in a case of maligant stricture of the œsophagus. The method employed is described by Mr. Greig Smith in his work on "Abdominal Surgery," p. 319. On account of its simplicity and efficiency, it is well worthy of trial.

Prof. Girard has suggested the manufacture of a sphincter muscle by means of interlaced bundles of the rectus abdominis.

Tubage in cancerous œsophageal stricture as suggested by Mr. Charteris Symonds in 1884, has undergone further improvement at the hands of its author. (See "Lancet," vol. i, 1889, p. 622.)

The operation of gastro-enterostomy has been successfully performed by Dr. Rausohoff and Mr. Kilner Clarke by means of Senn's bone plates, thus shortening very considerably the length of time occupied in the operation.

Mr. Herbert Page reported a case of Woelfler's operation which he had performed, and although the ileum instead of the duodenum or jejunum had been sutured to the stomach, the patient's life had not been shortened. The author mentioned that out of thirty-six cases which he had been able to collect, there had been fifteen deaths; but out of the last eighteen, only five.

The operation of pyloroplasty for cicatricial stenosis of the pylorus, as performed successfully by Mikulicz in a woman aged twenty-three, whose disease had been caused by swallowing a teaspoonful of strong sulphuric acid, has been well described by Dr. Ortmann, who says that the operation presents manifest advantages over resection of the pylorus and Woelfler's operation.

REFERENCES :—Bazy, "Arch. Gen. de Médic," March 1889; Loreta, "Brit. Med. Jour.," p. 903, vol. i, 1889; Girard, "Brit. Med. Jour.," p. 676, vol. i, 1889; Ransohoff and Clarke, "The Polyclinic," Feb., 1889, and "Brit. Med. Jour.," Nov. 16, 1889; Page, "Brit. Med. Jour.," p. 1114, vol. i, 1889; Ortmann, "Annals of Surgery," p. 277, vol. ii, 1889.

Synopsis.—(Vol. 1889, p. 442.) For dilatation of stomach **Tannin** xx centigramme doses if no constipation exists; x centigramme doses if bowels are inactive. For the dilatation of rickets, **Laxative Salines**, **Ol. Merrh.**, **Lavage**; meals must be frequent and small, excluding tea, beer, and aerated waters, and substituting **Lemon Juice** for vegetables and using farinaceous foods and milk sparingly. Where acid is excessive and epigastric tenderness exists, **Nitrate of Silver** in **Coated Pills**, gr. ¼ half an hour before meals. Where acid is deficient **Ac. Hydrochlor**, gtt. v, well diluted, may be given every half hour after a meal until four doses have been taken. In periodic gastrosuccorrhœa **Narcotics** are recommended, *e.g.*, **Nepenthe**, in small doses; also **Nitrate of Silver**, grs. j to jss, and for the nervous symptoms, **Bromide of Sodium** in xx gr. doses.

STOMATITIS.

Synopsis.—(Vol. 1889, p. 359.) **Sod. Salicylate**, 20% sol. applied five or six times daily, especially after meals for confluent aphthous stomatitis.

SWEATING (COLLIQUATIVE).

Synopsis.—(Vol. 1889, p. 11.) **Agaricin**, gr. ⅛, at bedtime and repeated twice during night.

SYCOSIS.

Dr. Jackson, as the result of his experience in the treatment of sycosis, gives the following advice: In acute cases where there is much pustulation, epilate or curette, and apply **Boric Acid Ointment,** or **Lassar's Paste** with **Salicylic Acid.** Give one-tenth of a grain of **Calcium Sulphide** in fresh tablet triturates every one or two hours. If an acute outbreak of pustules occurs under it, stop it until a subsidence of the eruption takes place, and then begin again. In subacute cases, where there is not so much pustulation but more redness and the disease is more patchy, epilate or curette, and use **Bronson's Ointment** (Hydrarg. Ammon. ℈j; Hydrarg. chlor. mitis ℈ij; Vaselin. ℥j.), or one of **Sulphur, Tar** or other mild stimulant. Or use soap frictions, followed by protective ointments. In chronic cases, epilate or curette, or apply a solution of **Caustic Potash** carefully to the diseased parts. Locally, employ strong ointments or solutions of **Tar,** provided caustic potash has not been used. If caustic potash has been used, then apply a simple soothing dressing. The use of **Tar** in **Alcohol,** as proposed by Pick, of Prague, has of late given brilliant results in his hands in some cases of chronic eczema. Soap frictions are also valuable at this time. As chronic and subacute cases may take on acute forms under stimulating treatment, we must be prepared at any moment to apply more soothing methods of cure according to indication. ("Jour. of Cut. and Genito-Urin. Dis.," vol. vii., No. 76.)

Unna ("Monat. Prakt. Derm.") considers that the ordinary form of sycosis is like that due to the trichophyton tonsurans, caused by parasitic agency, though in it microphytes are cocci, hence he names this variety coccogenic sycosis. The radical cure of it is a much more difficult problem.

In general the greatest success will be obtained if this form be treated as a furunculosis, and the affected area be shaved in order to produce a deeper influence on the disease. In severe cases a **Carbolic-Mercurial** or a **Resorcin** plaster muslin should be worn constantly; or where treatment at night alone is granted, a **Zinc Sulphur** salve muslin should be applied all night, while every morning the suppurating hair follicles should be epilated, and touched individually with a 5 per cent. resorcin spirit.

All surgical measures are superfluous and dangerous. Scarifications act favourably for the moment, but lead to fresh implantations of cocci. Epilation *en masse* without selection only furnishes new centres of infection.

When the sycosis has been got rid of by the foregoing measures, the as important after-treatment and prophylaxis begin, without which

relapses may certainly be anticipated. To these belong before everything the treatment of the sycotic catarrh, which is much more frequently present than many physicians, and even the patients themselves, are inclined to believe. Nasal douches of a 1 per cent. solution of **Ichthyol**, persevered in for a lengthened period twice a day, are very efficient in removing it. Washing with over-fatty **Sublimate Soap**, shaving with the same soap, destruction of each fresh suppurating point as it appears, by extracting the implicated hairs, and cauterizing by touching with the previously mentioned spirituous solutions, or with a pointed rod dipped in a **Corrosive Sublimate Paste**. The nightly inunction of a weak **Resorcin** or **Sublimate Vaseline**, when the beard is still worn, or with a corresponding paste if it is removed, and continued steadily.

Synopsis.—(Vol. 1889, p. 456.) Shaving and epilation and then soothing applications, *e.g.*, **Oleate of Zinc** or **Ung. Iodoformi.** If there is much infiltration, bathe with hot water, rub with soft soap, and then use **Sulphur Ointment**; ℞ Sulph. Præcip., ʒj, Creasoti, ♏x, Vaselini, ʒj, M. To be gently but firmly rubbed in twice a day; or, ℞ Tragacanthæ, ʒss, Glycerini, ʒss, Boracis, ʒss, Aq. Dest., q.s. Ft. Pasta.

SYPHILIS AND GONORRHŒA. *J. Hutchinson, Jun., F.R.C.S.*

General Treatment of.—A good deal has been heard lately of the hypodermic administration of **Mercury**, observers in all parts of the world having given the method a trial. It has been warmly praised by Mr. Bloxam of London. Professor Neumann, of Vienna, on the other hand, declares that it is less satisfactory and much more unpleasant for the patient than the older methods of treatment. The last observer used the hypodermic method in over fifty cases. Dr. Schwimmer speaks by no means highly of the comparative value of the method.

If it be tried, it is important to use a preparation of mercury which is not likely to set up local inflammation, and amongst the best appear to be the **Yellow Oxide** and the **Salicylate.** Neither is soluble in water, and they require to be suspended with the aid of mucilage, a mixture with paraffin being also sometimes used. Many observers (amongst them Epstein, Szadek, and Neumann) endorse the non-irritating character of salicylate of mercury. What strikes one most in reading the accounts of cases treated by the hypodermic method is the very small amount of mercury used as compared with that considered advisable in the ordinary methods of treatment. It seems open to doubt whether the unpleasantness of the method did not lead many of the patients to give up the treatment before it was desirable that they should do so. We hear of only 18 or 36 grains of salicylate of

mercury being used in the whole course of treatment, six to twelve injections being reported as sufficient.

The Danger of Chromic Acid as a Caustic.—**Chromic Acid** has of late years come largely into vogue as a stimulant or caustic application in the treatment of various syphilitic and venereal affections, ulcers of the tongue, papillomata, etc. As commonly used in solutions of 5 to 20 grains to the ounce, there is no danger of toxic symptoms following, and the result is often very satisfactory. But when a saturated solution is employed to destroy the tissues involved, the risk of absorption should not be forgotten. The writer believes that **Acid Nitrate of Mercury** is a far safer caustic, and one equally effective. Dr. White, of Philadelphia, records an instructive case in which a solution (100 grains of chromic acid to the ounce) was freely applied to some large vegetations of the vulva, death from poisoning resulting twenty-seven hours after the application. Collapse, thirst, and vomiting were the chief symptoms, the intellect being retained to the end. On analysis the liver and kidneys were found to contain a considerable amount of chromic acid, apparently combined with sodium. Professor Gubler, nearly twenty years ago, pointed out this danger in the use of chromic acid.

Is the Tolerance of Large doses of the Iodides a Diagnostic sign of Tertiary Syphilis?—To many it will seem strange that the affirmative answer to this question should be given by an experienced observer. However, Professor Wood, of Philadelphia, has asserted it, the statement leading to a prolonged and interesting discussion with Dr. White in the "Therapeutic Gazette." Dr. White was able to produce opinions directly opposed to the views attributed to the former writer, given by the best syphilographers in America. As it is most important to clearly define the points at issue, we will quote from Professor Wood's own words: "For the purposes of practical medicine, when we find that a person can tolerate large doses of the iodides, the probabilities that such person is suffering from syphilitic infection are so strong as to warrant the diagnosis of syphilis, if the tolerance of the iodide is accompanied by the presence of symptoms of organic disease not readily explainable." The last phrase or proviso is obviously of no value, since the mere existence of obscure symptoms cannot affect a patient's tolerance of iodides, nor really help to warrant a diagnosis of syphilis. Take, for instance, the hepatic symptoms due to a tumour growing on the under surface of the liver, the cause during life may be obscure enough, but the only question to be answered with regard to tolerance of iodides is, "would such a case be less likely to show symptoms of iodism if the tumour be a gumma than if it were a cancer?" The improvement effected by iodides, as a rule, in tertiary

syphilitic phenomena, is not under debate, simply the tendency to show toxic signs, general depression, coryza, acne, etc. The large doses referred to are 20 grains of iodide twice or thrice daily; and, as many physicians order such doses for non-specific diseases, *e.g.*, thoracic aneurysm, data for arriving at a satisfactory conclusion, are to be had without difficulty. After carefully studying the papers of Wood, White, Otis, Taylor, and many others on the subject, the only conclusion to be arrived at is, that there is little or no evidence that patients with tertiary syphilis show a special tolerance for iodides. Individual peculiarities or idiosyncrasy play a more important part, it being notorious that, in both syphilitic and non-syphilitic cases, a few grains taken daily by one patient may produce the same toxic symptoms that several drachms would in another. If it were true that the presence of tertiary syphilis rendered its subject tolerant to the iodides, it would be often a valuable aid in diagnosis and treatment, but such, unfortunately, is not the case.

Professor Wood has had large experience in treating cases of tertiary nerve disease, and it is worth noting that, where a speedy effect is to be desired, he employs mercury in preference to iodides, using the following formula in cases where there is low vitality, etc.:—

℞ Hydrargyri Bichlor.	gr. $\frac{1}{12}$	Ol. Caryophylli	♏ j
Tinct. Ferri Perchlor.	♏ vj	Syrupi ad	℥j
Glycerini	♏ xxv		

To be taken after meals.

There is not much of interest to be derived from the long discussion that took place, beyond the almost unanimous verdict, that tertiary syphilis gives its subject no sort of immunity against iodism.

Will the early Administration of Mercury prevent the Occurrence of Secondaries?—Many cases of chancre come under care at a stage when, from the induration of the sore, the typical bubo, etc., the surgeon can feel certain as to its infecting nature, and yet before any secondary symptoms have appeared. There can then be no doubt that it is advisable for the patient to commence taking mercury, and the question arises, whether, by so doing, the further development of syphilis can be prevented. We are supposing that the drug is given in small doses, and so administered that a long course can be continued without producing gastric irritation, etc. Most observers on this point agree that the advent of the roseola, sore-throat, etc., can be postponed beyond the usual time; that the secondaries are milder than they would have been had no mercury been given, and a few even hold that they can be entirely prevented. But this happy result is probably rather the exception than the rule. Drysdale always found

in his cases of primary chancre, treated with 1 grain doses of mercury and chalk, or $\frac{1}{6}$ grain of green iodide, some slight secondary manifestations, such as a mucous tubercle or roseola.

Syphilitic Fever resembling Tertian Ague.—Dr. Phillips reported an unusual case of a woman, who, nine years after syphilitic infection, suffered during a period of several months from recurrent febrile attacks. Rigors, headache, and vomiting were present; at first the attacks came on every day, later on alternate days. The resemblance to ague was so great that quinine was given for some time, but, as it had but little effect, mercury and iodide of potassium were tried with the result of curing the disease. One can hardly doubt that in this case the spleen was affected, though, as a rule, tertiary disease of this viscus does not produce marked pyrexia (at least of an intermittent type).

Heart-complications of Gonorrhœa.—Rare examples of endo- and peri-carditis following gonorrhœa have been recorded from time to time during the last forty years, generally acute and even fatal in their course. Probably a minor degree of involvement of the heart will be proved to be much more common, now that attention has been directed to the subject. Dr. Glazinski has found records of thirty-one cases, having himself observed eight. The affection is most likely to arise during a very chronic gonorrhœa—palpitation, pericardial pain, acceleration of pulse-rate, and a slight pericardial rub being the chief symptoms. In two cases cardiac failure and endo-cardial murmurs subsequently developed. Gonorrhœal rheumatism was present in some of the cases, absent in others. It may be noted that the pathology of the joint-affection still remains obscure, the presence of the gonococcus in the synovial fluid having been proved (?) by some observers, denied by others (amongst them Prof. Bumm). The latter observer holds that the urethral or vaginal mucous membrane, damaged by the gonococcus, may serve to transmit other disease-germs, such as those of pyæmia and tuberculosis, and there is a good deal of evidence in support of this view.

New Methods of treating Gonorrhœa and its Results.—**Sulphate of Thallin** as an injection (1 to 2 per cent. solution) has been praised by Dr. Teineira, of Brazil; he uses it in both the acute and chronic stages of urethritis.

The **Salicylate of Mercury** has also been recommended for the same purpose, used according to the following formula:—

℞ Hydrargyri Salicylatis, gr. $\frac{1}{4}$ Sodæ Bicarbonatis gr. iij	Aquæ Destillatæ ℥i

The writer has seen very good results from the use of injections of **Sulphocarbolate of Zinc**, thus :—

℞ Zinci Sulphocarbolatis, gr. ij to v	|	Glycerini	ʒi
		Aquæ Dest.	ʒi

It is notorious that the strength of an injection requires to be modified according to the period of the disease, etc. Dr. Martin made a series of observations on soldiers under his care, and found that the use of corrosive sublimate injections (1 in 20,000), from the first day that the patient came under observation, gave a somewhat better result than the old plan of waiting until the acute stage had subsided before injecting. The difference in duration was not however great—twenty-four as compared with twenty-seven days. Dr. Martin also tried sulphate of quinine injections, but, like other observers, did not find them very satisfactory.

It is rash to affirm the absolute novelty of any method of treating gonorrhœa, but that advocated by Dr. Zeisler certainly appears to be new. It consists in filling the urethra (so far as that can be effected) with a dry antiseptic powder, and it is said to be applicable to the earliest stage of the disease. The powder (boracic acid alone, or mixed with sulphate of alum, subnitrate of bismuth, etc.) is introduced through a cannula, cupped at its end and with a spiral in its centre, which is used to protrude the powder. The patient's bladder must be emptied and the urethra washed out before the application, which is said to be almost painless when done under cocaine. The instrument is passed until its end is in the membranous urethra, and is slowly withdrawn whilst the powder is being forced out. The process needs to be repeated a few times, and an astringent injection is said to finish the treatment at the end of a week or two. Further experience is of course needed before we can pronounce on the value of this method, which certainly appears to promise well.

REFERENCES.—Neumann, "Wien. Med. Presse," 1888, Nos. 32 et seq.; Schwimmer, "Monat. für prckt. Dermatologie," 1888; White, "New York Med. Journal," June 8, 1889; Phillips, "Lancet," April 13, 1889; Zeisler, "Medical Record," Jan. 19, 1889.

Syphilis of the Nervous System. *Charles L. Dana, M.D., New York.*

Treatment of.—Dr. Wm. R. Gowers, in a series of lectures on syphilitic affections of the nervous system deals briefly with the subject of treatment. He advises **Iodide of Potash**, particularly in gummata, but thinks it can accomplish all it is capable of in six to ten weeks, and that a longer continuance may do harm, or render the organism unsusceptible to its benefits. In syphilitic inflammation he believes in

Mercury and advises its use by inunction. Dr. Gowers advises an intermittent treatment with iodides, rather than a long continuance of drugs. He recommends that every syphilitic subject, for at least five years after the date of his last symptoms, should have three weeks course of treatment twice every year, taking, for that time, 20 to 30 grains of iodide a day. If this practice were adopted generally, is it not reasonable, he asks, to anticipate that grave lesions would be much more rare? (Lettsomian Lectures "Lancet," Feb. 16, 1889, p. 314.)

Synopsis.—(Vol. 1888.) **Berberis** (p. 23); **Caroba** (p. 32); **Iodide of Sodium** (p. 66); **Phytolacca Decandra**, externally (p. 82); **Acalypha** (p. 1).

(Vol. 1889, p. 457.) For venereal buboes counter-irritation by painting over a large area with **Collodion**, mixed with **Iodine**, ʒj to ʒj of **Collodion**, may prevent suppuration. If pus form, aspirate and then distend cavity with **Carbolic** or **Corrosive Sublimate** solution. **Alanin**, v milligrammes dissolved in a cubic centimetre of water, administered hypodermically; for infants ij to v milligrammes (p. 12).

TABES DORSALIS. (See "Locomotor Ataxy.")

Synopsis.—(Vol. 1889, p. 13.) **Amylene Hydrate**, iijss gramme doses as hypnotic, and to diminish the lancinating pains.

TETANUS. *Charles L. Dana, M.D., New York.*

Dr. J. C. Minor has written an admirable article upon the treatment of the acute stage, which deserves to be read in full. His main therapeutical idea is that we must fight the convulsive microbic poison of tetanus with paralyzing drugs used boldly. Those to which Dr. Minor gave the preference were **Calabar Bean, Chloral,** and the **Bromides,** with an occasional resort to chloroform. Each of these remedies, he said, appeared to have a special place and purpose in clinical use. Chloroform, Calabar bean, and chloral were the most efficient in the first period of the disease and at its crisis or climax; while the bromides, and also the salicylates, come into use during the declining stage.

Dr. E. de Rienzi states in the "Rev. Clin. Terap." that since the year 1882, he has treated six cases of tetanus, five of which recovered. The following are the author's rules for treatment: (1,) The patient, whose ears are closed with cotton or wax, must remain in a perfectly dark and noiseless room, and should be told that recovery depends upon his keeping perfectly quiet; (2,) Carpets should be laid in the sick chamber and adjoining halls and rooms, in order to deaden all footsteps; (3,) The patient's room should only be opened every four hours, and then with the greatest care. All food should be in the liquid form, such as milk, eggs (beaten), soups, wine and water, etc., and should be brought to the bedside in a cup; (4,) One should enter

the sick room with a covered light, being rather guided by the patient's moans than by one's sight; (5,) If the patient be constipated, neither laxative nor enema should be administered; nothing whatsoever is to disturb the patient's rest; (6,) If the pains are intense, ergot and powdered belladonna may be resorted to.

Dr. George T. Kemp, in an article on the etiology and treatment of this disease, gives the conclusions recently stated by Gullpa before the Paris Therapeutical Society. They represent very clearly the modern views of this disease: (1,) Tetanus is an infectious malady; (2,) There is no such thing as traumatismal tetanus in the true sense of the word; (3,) Although the horse is one of the most susceptible animals to the malady, it is certain that tetanus is not of equine origin: Verneuil to the contrary notwithstanding. It would be much more proper to attribute it to microbic origin, the microbe being found in the earth; (4,) The symptoms of tetanus are not due to the microbes, but to the toxic substance generated by them; (5,) At least during the first manifestations of tetanus the multiplication of the microbe is limited to the place of entrance. In only six per cent. of cases do we find the organism all through the body; (6,) While opposing the nervous theory of tetanus it is nevertheless true that the nervous system has a particularly marked susceptibility to react to the ptomaines produced by the organism; (7,) From a therapeutic point of view, there are three essential objects to be attained: (*a*,) The destruction of the nidus of development of the bacilli; (*b*,) The elimination from the system of the products of the bacilli; (*c*,) The sedation of the nervous system.

To destroy the bacilli in their nidus deep excoriations are made, and the place washed with 5 to 10 per cent. of sublimate, or cauterized with nitric or sulphuric acid. He recommends elimination by purgatives and diaphoretics. The sedation of the nervous system is accomplished by sedatives, and, above all, absolute quiet. Note well the danger of eating flesh of animals dead with tetanus.

In the "Wien. Med. Blät.," No. 6, 1889, is a notice of three cases of traumatic tetanus reported by Dr. Luigi Casati, treated by the injection of the **Muriate of Pilocarpine** in all of which cure resulted.

REFERENCE.—"Med. News," Dec. 18, 1888.

Synopsis.—(Vol. 1888, p. 470). **Morphine** subcutaneously; preparations of **Zinc**; **Salicylic Acid**; mixed injections of **Morphia** and **Cocaine**, 5% each; **Cannabis Indica**, in full doses, and **Ice** to the spine. **Guachamaca** (p. 55).

THORACOCENTESIS. *Frank J. Wethered, M.D.*

In a clinical lecture on the indications for thoracocentesis, Prof. Potain ("Phil. Med. Times," April 1, 1889,) points out that these

arise from very few symptoms, the most important of which are, dyspnœa, syncope, abundance of the liquid, and its nature, with the duration of the malady. Dyspnœa alone may be an indication to evacuate the contained fluid, as it may bring on either rapid or slow asphyxia. When there is pulmonary congestion, or a bronchial inflammation on the side where the effusion is, we must never practise thoracocentesis, as we are almost certain to render the congestion greater. Whenever there is a tendency to syncope, we can lay it down, as a rule, that it is an important indication for immediate action.

With respect to the duration of the malady, Prof. Potain recommends that, if after the twenty-fifth day of treatment the liquid is not absorbed, it is best to draw it off; but if there is a rapid increase of the fluid, we ought to operate from the fifteenth to the twentieth day.

THROAT (Diseases of). (See "Gout in the," "Larynx," "Pharynx," &c.)

Synopsis.—(Vol. 1889, p. 464.) In threatened neuropathic paralysis of gullet, **Bismuth** in large doses, a teaspoonful 3 or 4 times a day; solid food and condiments as local stimulants; a **Benzoic Acid Lozenge** a quarter of an hour before food, and a little wine or neat brandy often assists swallowing. Tonics as **Strychnia** and **Iron**; **Faradism** by the œsophageal electrode several times a day if possible. In myopathic paralysis the continuous current daily by the œsophageal electrode for a month, then **Faradism** for a month, and **Faradism** and **Galvanism** on alternate days during the third month. For spasm due to hysteria, passage of a bougie, also **Galvanism** by the œsophageal electrode; if due to gout **Alkaline** treatment is useful, and if hyperæsthesia is marked apply **Alkaline Solutions** locally, *e.g.*, **Bicarbonates of Soda** and **Potash** and in extreme cases **Cocaine**, 2½% solution or **Morphia**, by Mackenzie's œsophageal injector. When irritability is allayed apply xv or xx drops of a weak astringent lotion on alternate days, *e.g.*, **Nitrate of Silver**, grs. v to x to the ℥j; **Perchloride of Iron** or **Chloride of Zinc** may also be used, warming the solution and applying by œsophageal injector as near as possible to seat of spasm; after these use bougies if spasm persist. **Concillana Bark**, decoction for relaxed throat associated with gastric derangement (p. 34).

THUMBLESS HAND. *Walter Pye, F.R.C.S.*

A thumbless hand is stated to have been much improved in usefulness by sawing through the metacarpal bones of the fore and little fingers in the middle, and turning the digits round toward the middle line of the palm until they were in opposition to the third and ring fingers respectively. The surgeon who reports the case is Dr. Lauenstein. ("Deut. Med. Werk.," No. 30, 1888.)

THYROID GLAND (Diseases of). (See also "Goitre.")

Synopsis.—(Vol. 1889, p. 468.) For hygroma of thyro-hyoidean bursa extirpation is necessary. For Crico-thyroid cysts puncture with or without injection, incision or excision. In cystic goitre tap and inject **Perchloride of Iron** solution, ℥ij ad ℥j, through a cannula which is plugged and left for 2 or 3 days to excite suppuration; or the fluid may be drawn off by a small trochar

and cannula, and 6 inches of catgut dipped in **Tincture of Iodine** introduced until it excites inflammation. In exophthalmic goitre, **Tinct. Verat. Vir.**, gtt. x to xxx.

TINEA FAVOSA.

Synopsis.—(Vol. 1889, p. 471.) Remove crusts and apply parasiticides. ℞ Ung. Hydrarg. Oleatis, ʒss, Adipis, ʒss; or, ℞ Cupri Oleatis, ʒss, Adipis, ʒj, M. Use the first a few days and then alternate it with the latter. ℞ Resorcini, ʒj to jss, Lanolini, Vaselini, Zinci Oxidi, Pulv. Amyli āā ʒij, M.

TINEA SYCOSIS.

Synopsis.—(Vol. 1889, p. 471.) **Boroglyceride**, 50% solution in **Glycerine**. If granulations be profuse brush the part with infusion of **Jequirity**; ℞ Ac. Borici. ʒiv, Ætheris Sulph., ʒv, Sp. Vin. Rect. q.s. ad ʒxx. Apply 3 or 4 times daily. **Oleate of Copper**, ʒss to ʒj; **Sulphur**, ʒj; **Ac. Carbolici**, ʒss; **Lanolin** c **Olio**, ʒj.

TINEA TONSURANS. *W. Allan Jamieson, M.D.*

The treatment of ringworm affecting hairy regions, as the scalp in children, and the bearded face in men, is admittedly difficult. The results vary much, even in members of the same family, though precisely identical methods have been pursued. Some authors recommend measures calculated to remove the oily matter from the skin as much as possible, and condemn ointments and all greasy preparations. Others use ointments and eschew soap. The best mode in my opinion is the following, which is based on the two principles: (1,) That the trichophyton tonsurans flourishes most freely in dry, scaly epidermis or hairs in a similar condition, and (2,) That such parasiticides should alone be used as cause no appreciable local irritation, but to obtain whose full action every facility must be afforded to permit their penetration.

Thus the hair must be shaved and kept closely shaved, or cut. The surface must be cleansed daily in such a way as to leave the skin in as nearly a normal state as possible. This is accomplished by washing with warm water and the over-fatty **Potash Soap**, made by Douglas, of Eimsbüttel.

An ointment containing sulphur and ammoniated mercury, such as the following, is to be carefully worked into the affected portions of the skin by the aid of a brush with stiff, short bristles :—

℞ Sulph. Præcip.	ʒj	Vaselini	ʒj
Hyd. Ammon.	ʒss	Ung. Simp. ad	ʒj
Thymol	gr. x	Mix.	

And over this some of the Pharmacopœial carbolic glycerine is smeared. This is done once daily, and from week to week a steady, though in some cases only a slow improvement is distinctly observable. Till the disease is cured the hair must be kept as short as possible by the razor or sharp scissors.

Synopsis.—(Vol. 1889, p. 469.) Shave the head; wash frequently with soft soap; a cap of oil silk or linen is to be constantly worn, and a new one supplied every fortnight; all brushes and combs as well as bonnets or hats used previously are to be destroyed; epilation is useful after treatment has loosened the hair, and the sensibility may be deadened by **Glycerine** and **Carbolic Acid**, or **Cocaine** 10% in **Lanolin**; **Oleate of Copper** loosens the hair. In children over 4 years old use **Coster's Paint** (Iodine, ℥ij, light oil of wood tar, ℥vj, M.; shake before using). **Creasote** or **Oil of Cade** may be used instead of the light oil of wood tar. In recent cases **Glacial Acetic Acid** with **Hydrarg. Perchlor.**, grs. iv to the ℥j is useful. **Galvanism** with the positive electrode saturated in 3 to 5% solution of **Bichloride of Mercury**, and applied for 10 or 15 minutes to the diseased spot (but this causes much pain), and **Salicylic Acid** as ointment, ℥j to ij to the ℥j, or as a lotion, grs. xx to ℥j of **Spirit, Ether,** or **Chloroform**; ℞ Ac. Carbol. Pur., Ung. Hyd. Nit., Ung. Sulph., equal parts of each mixing the carbolic and sulphur first, and then rubbing in the citrine ointment without using heat. **Croton Oil** used over a small area but never in young children. Sponging the part every day or two with a weak alcoholic solution of **Thymol, Borax, Naphthol,** or **Mercuric Bichloride**, and afterwards thoroughly saturating with a 50% solution of **Boroglyceride**, or a small quantity of **Oleate of Copper** ointment rubbed in each night. Water must not be used for the part while under treatment.

TINEA VERSICOLOR.

Synopsis.—(Vol. 1889, p. 471.) Wash the skin with soft soap and rub in a parasiticide, *e.g.*, **Sod. Hyposulphitis**, ℥j, **Aq. Dest**, ℥vj. Friction with powdered **Pumice Stone**, 1 parts, and **Soft Soap**, c parts. **Oleate of Copper**, ℥ij; **Lanolin**, ℥ij; or **Resorcin**, grs. x; **Adipis**, ℥j. The parts being first sponged for a few days with ℞ Thymol, ℥j; Sp. Vin. Rect., ℥j, Glycerine, ℥ij, M.

TONGUE (Fissures of). *P. Watson Williams, M.B.*

Obstinate fissures of the tongue, which have resisted treatment with chromic acid, nitrate of silver, and iodoform applied locally, have been successfully treated by Dr. Schwimmer with **Papayotin** (papain), 10 to 20 per cent. solution in glycerine and water. Of twenty-five cases treated with this solution, twenty-four were cured. Five or six applications should be made daily, the fissures being first dried.

Mr. Shield reports an intractable case of fissure of the tongue cured by the internal administration of opium, a simple carbolic acid mouth wash only being used locally.

References.—Schwimmer, "Rev. des Public. Méd.," Dec., 1888; Shield, "Lancet," 1889, p. 429.

TONGUE (Diseases of).

Synopsis.—(Vol. 1889, p. 472.) For Hypertrophy of lingual tonsil destroy the adenoid tissue with the **Galvano-Cautery, Nitrate of Silver,** or **Chromic Acid.** When dorsal lingual veins are enlarged use **Galvano-Cautery**, or apply **Iodine** or **Iodide of Potassium Ointment** to submaxillary region and relieve the portal circulation. For ranula, puncture with a hypodermic syringe, inject **Cocaine** solution 10%, leave it in for 4 minutes and then inject x or xii drops of 10% solution of **Chloride of Zinc**

TONSILLITIS.

Synopsis.—(Vol. 1889, 53.) Application of **Menthol**, 25% solution.

TONSILS (Hypertrophy of). *P. Watson Williams, M.B.*

Valat deals with the treatment of enlarged tonsils by ignipuncture. **Cocaine** should always be applied first. The finest thermo-cautery point (about two millimetres) is employed. The hot point is to be embedded in the tonsil about half a centimetre, and three or four cauterizations are practised at one sitting, each distant from the other some millimetres. The operation is then repeated upon the other gland. A dull red heat is indispensable, so as to avoid producing hæmorrhage. Keeping the places touched some millimetres from each other prevents the formation of a slough and painful ulcer. The heated point should be left buried in the tonsil for one or two seconds. The operation is repeated twice a week. For the reduction of very large tonsils, at least five weeks' treatment was required; in slighter cases atrophy was obtained in two to three weeks. Astringent gargles, insufflations of alum, etc., are recommended in the intervals. Verneuil's suggestion for the patient to surround the neck during the morning toilette with a towel wrung out in cold water, and to keep it on for about five minutes, is a good one.

The advantages of the thermo-cautery are: (1,) The ease in its application; (2,) Its innocuousness; (3,) The possibility of graduating the atrophy; (4,) Its applicability to cases in which a cutting instrument is contra-indicated; (5,) The absence of the three complications observed sometimes after tonsillotomy (recurrence, diphtheritic contagion, hæmorrhage).

REFERENCES.—Valat, "Gaz. des Hôp.," Nov. 17, 1888; "Jour. of Laryng.," Jan., 1889.

TORTICOLLIS. *Charles L. Dana, M.D., New York.*

Surgical measures are of little avail in this disease, except when it is of congenital or mechanical origin. Dr. Levrat, however, strongly recommends cutting down directly upon the sterno-mastoid. He then clears the tendon with the forceps, passes a grooved director under it, and divides it. He next divides any tissue that may bind down the muscle at that spot, sutures the wound, and dresses it antiseptically with iodoform and gauze. Over the dressings he places the following apparatus. The head being enveloped in cotton-wool, a silicated bandage is wound horizontally around it at the level of the forehead, and a similar bandage vertically over the crown and under the jaw. Where these bandages meet at the level of the mastoid process on the sound side, a small hook, with the concavity looking upwards, is inserted. Another silicated bandage is wound round the body below

the axillæ, and through the thickness of the bandage a hook is inserted in the middle line in front, having its concavity looking downward. When the bandages have dried, the two hooks are connected by a band of india-rubber, which assists the sterno-mastoid of the sound side to keep up a continuous traction, and so correct the deformity. This apparatus and the dressings are left untouched for fifteen days, and the success of the operation is said to be assured. ("Lancet," Nov. 24, 1888.)

TRANSFUSION. *A. H. N. Lewers, M.D.*

Mr. W. H. Brown, of Leeds, reports a case in which he successfully performed transfusion. The patient had been reduced to a state of extreme exhaustion from loss of blood caused by a large fibroid polypus. Twenty-five ounces of **Normal Saline Solution** were injected into the median cephalic vein. The patient rallied in a few minutes, and in three days was well enough to allow of the polypus being removed. She ultimately made a good recovery. Mr. Brown had used human blood in five previous cases with unsatisfactory results.

MM. Dastre and Loye have tried the effect on animals of injecting **Solutions of Salt** into the veins. The quantity introduced should not exceed 3 cubic centimetres per minute and per kilogramme of the animal. Provided these conditions are observed, and the kidneys are healthy, no harm results.

It has been recommended by Mr. Rainsford Gill in cases where transfusion is indicated, but the necessary apparatus is not at hand, to inject two or three ounces of **Saline Fluid** into the rectum. He records an apparently successful case, and under the circumstances mentioned the plan seems well worth trying.

REFERENCES.—Brown, "Lancet," March 16, 1889; Dastre and Loye, "Lancet," Nov. 17, 1888; Rainsford Gill, "Lancet," Nov. 3, 1888.

TRAUMATIC TETANUS. (See "Tetanus.")

TREMOR.

Synopsis.—(Vol. 1889, p. 45.) **Hyoscin**, gr. $\frac{1}{250}$ to $\frac{1}{100}$ as hypnotic and to relieve the movements.

TUBERCLE OF THE BRAIN. (See "Brain.")

TUBERCULAR DIARRHŒA. (See "Diarrhœa.")

TUBERCULAR DISEASES (Surgery of). *Walter Pye, F.R.C.S.*

Of the larger surgical questions which have been raised this year, probably the most interesting is the controversy on the treatment of tubercular joints, and especially of tubercular hip joints. It will be remembered that in 1888 Mr. Barker, in his important lectures at the

College of Surgeons, and afterwards at the Medico-Chirurgical Society, advocated very strongly early and complete removal of the tubercular tissue, before distinct suppuration has set in, holding that thus only could a disease be eradicated, of which he said that there was much to justify its being regarded in the light of a malignant growth. He further urged that the joint disease acted as a local centre whence a general systemic injection of tubercle might be developed.

Although it is probable that few, if any, English surgeons go all the way with Mr. Barker in his advocacy of very early excision, his views had the support of very many able men, and unquestionably a general stimulus was given to the early operation. Following on these lectures, however, Mr. Howard Marsh, who has this year filled the chair at the College of Surgeons, vacated by Mr. Barker, and than whom no surgeon can be found with larger experience or riper judgment, has joined issue with him as to the necessity of excision in early cases of hip disease. He holds that it is not at all a rare or exceptional experience, but is simply a common behaviour of a tuberculosis under favourable circumstances that the disease should show itself to be by no means inveterate or beyond control; that there is evidence that the bacillus often dies out for want of an appropriate soil, and that instead of being tenacious of life, it is perishable and short-lived; so that in a large number of cases its action entirely ceases, and the once diseased tissues undergo sound repair.

Mr. Marsh also dissents from the proposition that the risk of general infection with tubercle is sufficiently great to justify early operation. The figures he brings forward go to show that the proportion of cases in which local caseation has followed tuberculosis, and this again has been followed by systemic tubercular infection, is only about 5 per cent., and argues that, although the chance of general infection from a tubercular joint is a distinct element of danger, the risk is so small that it cannot be regarded as affording any substantial support to the practice of early excision, and he asks, "are we justified in excising the joint of a patient in order to avert the danger of general infection when the chances that he will escape are already twenty to one in his favour?"

He considers that tubercle has nothing in common with malignant disease, but that, on a general clinical view, it wears the aspect of a merely obstinate inflammatory process, and that for this reason excision must be justified by its own surgical results, not by consideration of the aversion of a possible danger.

In respect of the severer or more advanced cases of hip disease, Mr. Marsh advocates what may be called the "expectant" treatment, with

the early opening of abscesses, and combats Mr. Croft's opinion that in all cases of strumous joint disease in children, if pus is known to be present, the surgeon should excise, even if he be uncertain with regard to the state of the bone. He considers that the main defect of excision will lie in the ultimate condition of the limb when it is compared with a limb in which no operation has been performed. As in the case of the knee so in the hip, primary union after operation may occur, and yet the ultimate result be often unsatisfactory.

In connection with this subject of operative treatment of hip disease an ingenious gouge has been devised by Mr. Barker, *Fig.* 48, by means of which the cavity of the wound, which is being scraped out, is flushed out at the same time with hot water. This gouge is found in practice to be very useful, although, as an instrument, there is much room for improvements, which will no doubt be made.

The same surgeon also advocates the employment of sterilised hot water during the performance of such operations as excision of the hip. The temperature should be 105° to 110° F., and he considers that the use of antiseptic lotions or germicides should

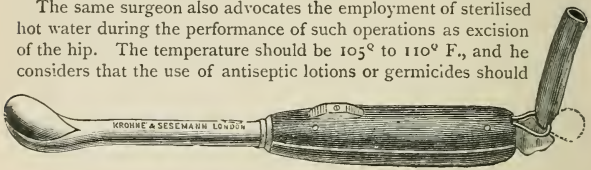


Fig. 48.

be reserved for the conclusion of the operation.

TUBERCULAR MENINGITIS.

Henry Dwight Chapin, M.D., New York.

Dr. Warfwinge ("Arch. di Patol. Inf.," May, 1888,) has treated five cases of tubercular meningitis with **Iodoform Ointment.** The following points are advanced :—

(1,) Iodoform which does not contain less than 96·7 per cent. of acid is nearly insoluble in water and in blood-serum, and cannot penetrate the animal economy, except through the medium of fatty substances with which it may be combined.

(2,) It is probable that when it is applied by friction, it is received into the subcutaneous adipose tissue, which acts as a vehicle to its transmission. According to Binz, it is broken up, with the liberation of iodine, and this is absorbed and carried along by means of the organic fluids.

(3,) The iodine, in such cases, will act upon the protoplasm of the cells, both developing and destroying it.

(4.) This explanation will apply in regard to the treatment of tubercular

meningitis by iodoform inunction; in accordance with which the free iodine would be carried by the lymphatics to the surface of the brain.

(5,) Whatever value be attached to any particular method of rubbing in the iodoform in tubercular meningitis in children, it would seem as if the subject were worthy of the serious attention of the profession.

(6,) Future experience may show that more rapid results may be obtained by some modification of this method than have thus far been reported. On the other hand, the prolonged use of iodoform is not followed by any accident.

TUBERCULOSIS.

Synopsis.—(Vol. 1889.) **Amylene Hydrate** as hypnotic (p. 13). **Kava-Kava**; ℞ Ext. Kavæ. depur., grs. xlv, Sacch. Alb., gr. ccc, Ft. Pulv. Div. in dos. x, Sig. Pulv. j 3tis hor. for the dyspnœa (p. 50). **Strophanthus**, ♏iij to vj every 6 hours as antipyretic (p. 68).

TUBERCULOSIS OF PERITONEUM. (See "Peritoneum.")

TUMOURS.

Synopsis.—(Vol. 1889, p. 70). **Thuja Occidentalis Tincture**, gtt. xx to lxxv per diem for tumours of ear, nose, pharynx; and larynx, also as palliative in epithelioma and cancer, using at the same time as an application, ℞ Tinct. Thujæ, ℥j, Glycerini, ℥ij, Aq. ℥ijss, M.

TUMOURS OF THE BRAIN. (See "Brain.")

TYMPANITES IN PREGNANCY. (See "Obstetrics.")

TYPHLITIS AND PERITYPHLITIS. *F. de Havilland Hall, M.D.*

Is the perityphlitic abscess usually extra-peritoneal or intraperitoneal?—Dr. R. J. Hall states that in one hundred autopsies in cases of so-called perityphlitic abscesses, he has found general suppurative peritonitis present in fifty-seven instances, circumscribed abscesses inside the peritoneal cavity in thirty-five cases (in thirteen of which general peritonitis had also existed), and extra-peritoneal abscesses only four times.

Mr. Treves has proved that the cæcum is most frequently situated, not in the right iliac fossa, but on the fascia of the psoas muscle, and that it is generally completely surrounded by peritoneum. Sometimes there is a meso-cæcum. Since fifty-seven per cent. of the autopsies made showed general suppurative peritonitis, and thirteen per cent. a circumscribed abscess with general peritonitis, general peritonitis therefore being present in seventy per cent. altogether, Dr. Weir was in favour of early operation, and was of opinion that if it was practised within twenty-four or forty-eight hours, a number of those, who now died, might be saved. The opinion of the majority of those who took part in the discussion at the New York Surgical Society was, however, in favour of the surgeon's waiting before operating until the formation of pus, and against the immediate operation.

Two points may be emphasized in the treatment of typhlitis; one is the use of leeches, four to eight applied over the part, when the pain is considerable, and the other is the undesirability of milk forming the staple diet in these cases. Milk has the unfortunate property of forming hard lumps due to the coagulation of the casein, consequently, meat juices, such as beef tea, veal tea, mutton broth, etc., are preferable, still better is the meat essence prepared by the action of cold distilled water with salt and hydrochloric acid, on beef. A pound of lean beef is to be cut up finely and mixed with one pint of distilled water, to which four drops of hydrochloric acid and a teaspoonful of common salt have been added. After standing in the cold for one hour, strain through a hair sieve without pressure, add sufficient water and re-strain until one pint of essence is obtained.

REFERENCES.—Hall and Weir, "New York Med. Jour.," Aug. 3, 1889; Preston, "Trans. Med. Chir. Fac. of Maryland," April, 1888; Duckworth, "Lancet," Oct. 6, 1888; "Medical Annual," 1889, p. 504.

TYPHOID FEVER. *F. de Havilland Hall, M.D.*

Dr. Howard Taylor calls attention to the value of Ehrlich's diagnostic sign of typhoid fever which has been submitted to a careful trial at the London Hospital. In 1882 Dr. Ehrlich announced the fact that the urine of patients suffering from typhoid fever gives a reaction—with one of the aniline derivatives—different from that of normal urine, and from the reaction of the urine of patients suffering from other diseases.

His test solutions are as follows: *A*, a saturated solution of sulphanilic acid in dilute (1 in 20) hydrochloric acid; *B*, a ·05 per cent. solution of sodic nitrite in distilled water. (Both of these solutions must be fresh, especially the latter, which cannot be depended on for more than a week at the longest. When they are mixed, of course, a solution of sulphanilic acid containing free nitrous acid is produced, which is the actual test solution; but, on account of the extreme instability of the latter, the two solutions must be mixed fresh at each testing). In using the test, about 25 parts of *A* are added to 1 of *B*. Mix with this an equal bulk of the urine to be examined, and render alkaline with strong ammonia.

With normal urine, the only change which ordinarily occurs is a mere deepening of its colour to a sherry or vinegar brown. In conditions of pyrexia other than typhoid fever the colour also deepens, but still remains nearly brown, although usually it becomes of a darker tint than the average colour given by normal urines. But when the test is applied to the urine of a patient with enteric fever, the colour

rapidly turns red, the exact tint it acquires varying from the yellowish-red of bichromate of potassium solution, through ruby-red, to a rich port wine colour. On shaking the test tube a froth is produced, which has usually a delicate pink colour that is very characteristic.

Such is the reaction ; now as to its limitations. In the first place, it is not *always* given until the latter part of the first week ; but as the case frequently does not come under observation till then, this does not greatly limit its usefulness. And again, after the morning temperature has once reached normal during the intermittent stage (usually in the fourth week) it may—though it frequently does not—cease to be given.

Dr. Taylor adds that, as far as his experience has gone, the reaction is present during a great part of the febrile period, *in every case.* It is this which constitutes the great value of the test.

If it had been found—as one could have wished—that typhoid fever was unique in this respect, the test would have been by far the most reliable sign we possess, as being the only invariable one. But, unfortunately, *in exceptional cases*, the reaction is given in other diseases. Herein lies its weakness. However, while in most diseases it is a more or less rare exception, it seems to be an invariable (or almost invariable) rule in enterica. Occasionally, even in the urines of healthy subjects, a slightly reddish colour is developed ; but this is *very* rare, and the redness is hardly ever well marked : indeed, the deep rich crimson which is given in so many cases of enteric fever never being produced.

Apart from conditions of pyrexia, Dr. Taylor states that he has notes of cases of Bright's diseases, both acute and chronic, which gave this "typhoid reaction ;" indeed, in albuminous urines he has found it more frequently than might be expected ; but with this exception it is extremely rarely given by the urines of patients whose temperatures are normal. Thus, out of a large number of cases of valvular disease of the heart, it only occurred in one in which hysteria was well marked. In chorea a slight reaction was given in one out of six cases. In two cases of diabetes mellitus and one of diabetes insipidus the reaction has not been given on any occasion. In febrile diseases it seems to be especially common in measles ; while in acute tuberculosis, which of all diseases perhaps most often simulates typhoid fever, it has been absent in each of several cases that he has examined. In acute and advanced chronic phthisis reaction has been obtained in a few of a good many cases, but in the ordinary cases of this disease it has not been detected. In cases of lobar and of lobular pneumonia none of the

urines have turned red. In only two of a large number of cases of acute rheumatism has the reaction been present.

From the above facts it would seem that the following conclusions can be drawn from Ehrlich's test. The absence of the reaction is practically proof positive that the case in question is not one of enterica (provided that the disease has lasted six days or more, and that the temperature has not yet fallen to normal). Its presence suggests —but does not prove—that the case is one of typhoid ; the probability being greater the deeper the tint produced. And as the other diseases in which it occurs least rarely are not those which most closely resemble typhoid fever, but the reverse, the significance of these exceptions is very greatly diminished.

The occurrence of *adventitious rashes* in patients suffering from typhoid fever is oftentimes very puzzling, and they may lead to diagnostic errors, so that Dr. J. W. Moore's observations on this point are a valuable contribution to medicine. He has detailed a series of cases which exemplify this occurrence, and sums up as follows : (1,) Not infrequently, in the course of typhoid fever, an adventitious eruption occurs, either miliary, urticarious, or erythematous ; (2,) When this happens, a wrong diagnosis of typhus, measles, or scarlatina respectively may be made, if account is not taken of the absence of the other objective and subjective symptoms of these diseases ; (3,) The erythematous rash is the most puzzling of all ; but the prodromata of scarlet fever are absent, nor is the typical course of that disease observed ; (4,) This erythema scarlatiniforme is most likely to show itself at the end of the first or in the third week of typhoid fever ; (5,) In the former case, it probably depends on a reactive inhibition of the vaso-motor system of nerves ; in the latter, on septicæmia, or secondary blood-poisoning ; or both these causes may be present together ; (6,) The cases in which this rash appears are often severe ; but its development is important rather from a diagnostic than from a prognostic point of view ; (7,) Hence no special line of treatment is required beyond that already employed for the safe conduct of the patient through the fever.

TREATMENT.—Intestinal antisepsis in typhoid fever seems destined to play a prominent *rôle* in the treatment of this disease. Prof. Bouchard's investigations have led him to suggest **β-Naphthol** as the substance most suitable to act as an antiseptic in the intestines. Dr Leroux has employed it with great success at his Children's Hospital. As soon as the child is brought in suffering with symptoms of typhoid, the intestines are at once cleared out with **Calomel,** given in doses of ½ to 1 grain, depending on the child's age. The

next day the intestinal antiseptic treatment is commenced as follows :—

℞ Naphthol Beta 40 grs. | Bismuth Salicylate 40 grs.

Mix. Divide into ten powders, and give one every hour in a wafer, or mixed with a little milk or brandy.

If the diarrhœa is not important, the bismuth may be left out and only the naphthol given, and if, on the contrary, there is constipation, then the following is used :—

℞ Naphthol Beta 40 grs. | Magnesia Salicylate 40 to 80 grs.

Mix. Divide, and use as above, till bowels are free, and then continue with naphthol alone.

It will be found that there will be diminution or entire suppression of intestinal meteorism, and that the stools are disinfected, no longer giving the fœtid smell of typhoid, and also the mouth and tongue will clear up, the general state will improve, the disease will proceed quietly, and the convalescence will be shortened under this treatment.

Dr. Michell Clarke has made use of the drug in seven cases, and he draws the following conclusions from the study of these instances : (1,) That the production of intestinal antisepsis is a rational mode of treatment of enteric fever, and that β-naphthol is a safe and tolerably efficient agent for this end ; (2,) That by its use in the above cases the duration of the disease was shortened, and the intensity of the symptoms directly arising from profound disturbance in the alimentary canal was lessened ; (3,) That the tendency to the occurrence of splenic enlargement, albuminuria, and of secondary complications such as boils, abscesses, etc., of purulent infective origin, is diminished ; (4,) That complete convalescence is more speedily and satisfactorily attained : and that there is less risk of a propagation of the disease to others. Finally we must bear in mind that in some patients naphthol may excite so much gastric disturbance as to prevent its use. He found that in adults 40 grains distributed over the twenty-four hours were sufficient to keep the intestinal contents aseptic. The drug may be administered in milk or in mucilage of tragacanth with some flavouring agent such as syrup of lemons.

Even more important than the introduction of new remedies is the necessity of carefully testing those already in use, and therefore Dr. Pope deserves our thanks for his observations on the use of phenol in enteric fever. In the "Annual" for 1889, p. 473, Dr. Gramshaw's recommendation of this method of treatment was noticed. Dr. Pope's experience is quite different to that of Dr. Gramshaw, and as a result he has formed the opinion that the combination of phenol with iodine, as recommended by Dr. Gramshaw, has but slight effect

on the temperature, and none on the percentage, mortality, complications, or general course of enteric fever.

Ziemssen attributes the lowered mortality of typhoid fever within the past few years to improved therapeutics. A few only of the more important features of his very extensive and scientific paper can be here given. The patient's room should be capacious, quiet, and well ventilated. Water-pillows should be used, and, when possible, a second bed. The author is in favour of easily digested albuminates during the fever. **Beef Juice** extracted from fresh beef is the most suitable, and of this the patient should have 150 to 200 grammes (5 to 6½ oz.) in twenty-four hours. Regarding other forms of nutriment, the author follows the prevailing methods. **Gelatin** is often given in form of calves' foot jelly with wine. The author gives but few medicines, and these only when specially indicated. **Calomel,** he thinks, has a decidedly beneficial effect when given at the right time—that is, within the first five days of the illness. He gives seven and a half grains three times within two hours. Strong emphasis is laid upon his method, which is so well known, of reducing the temperature by graduated **Cold Baths.** He speaks warmly of **Antipyrin** as an antipyretic, of which he administers 5 grammes (grs. lxxv), in three divided, hourly doses, beginning the administration after 6 p.m. **Thallin** and **Acetanilide** receive praise from him, but he condemns quinine, because it is attended with untoward effects—such as noises in the ears and an indescribable sensation all over the body. Kairin and salicylate of of sodium as antipyretics he considers antiquated. In slight cerebral symptoms an ice-bag should be applied to the head, but not continuously; in severe cerebral symptoms, graduated **Baths,** with cold affusions, are indispensable. Insomnia and restlessness are best combated by an injection of **Morphine.** A tendency to cardiac weakness is best met by excitants, the best of which are **Camphor** and **Wine, Champagne** and **Brandy.** Severe diarrhœa is best treated with **Starch** and **Opium** enemata. Intestinal hæmorrhages call for ice bags on the abdomen, and subsequently for ice water enemata, which act reflexly. The intestinal hæmorrhages which occur between the fourth and sixth weeks offer a much worse prognosis than those that occur during the second and third weeks. Bed-sores can be avoided by care, cleanliness, cold water treatment, and a water pillow.

During convalescence great care must be exercised regarding the diet. For five days, at least, after the non-febrile period has set in, the diet should continue to be of a liquid nature. After this it may be given in a semi-solid form for a few days, and then solid food may be cautiously given. The patient should keep in his bed for fourteen

days, even after a mild attack, and for three or four weeks after a severe one.

Is surgical treatment of perforation of the intestine in Typhoid Fever justifiable?—Dr. J. Ewing Mears read a paper on this subject at the annual meeting of the American Surgical Association, 1888, in which he stated that he had been able to find but four cases of surgical interference in perforating typhoid ulcer, in all of which a fatal result occurred. His answer would therefore be summed up as follows : (1,) Surgical interference is not justifiable and should not be instituted in cases of typhoid fever in which perforation occurs when the infective process is at its height ; (2,) In mild cases of the disease in which the pyrexia has not been of high grade, and in which perforation occurs at the end of the third week, or later when the stage of convalescence is fully pronounced, laparotomy may be performed. Surgical interference in cases of this character is advocated with the hope that if the method of operation suggested by Lücke—laparotomy with the creation of an artificial anus—be adhered to, success may be attained ; (3,) Rapidity of operation will be an essential factor in the achievement of success, through which prolonged exposure of the cavity will be avoided and shock greatly lessened.

Diet in the Stage of Convalescence.—In the course of a discussion upon this subject at the annual meeting of the Association of American Physicians, 1888, Dr. William Ord, of London, said : " On more than one occasion of late, I have had warning that one must be guided to a certain extent by the desire of the patient for food, and I have learned to give in to this desire in general. I will quote a case which occurred a month or two ago. It was a girl in St. Thomas's Hospital, who had a severe attack of typhoid fever, and convalescence had set in. Then, without any existing condition to account for it, she began to have a large range of temperature, rising steadily in the evening and falling in the morning, till at the end of three days the range of temperature was was from 3 to 5°. With this she became slightly delirious, and menaced her physician when he came round. Then, for two or three days more, the temperature was still higher, with more disorder in her mind and craving for food. Now I tried the effect of giving her solid food. She was allowed at once boiled sole. Within twenty-four hours after taking the fish her temperature became normal for four hours, her delirium ceased, and from that time on she made an uninterrupted recovery. This is an instance of what we have to do in all cases of convalescence, viz., the study of the individual as well as of the fever."

REFERENCES.—Taylor, " Lancet," May 4, 1889 ; Moore, " Lancet," Nov. 16, 1888 ; " Phil. Med. Times," July 16, 1888 ; Clarke, " Pract.,"

Dec., 1888; Pope, "Lancet," April 13, 1889; Ord, "Phil. Med. News," Oct. 6, 1888, p. 391; Mears, "Phil. Med. News," Sept. 29, 1888, p. 358; Ziemssen, "New York Med. Times," Jan. 19, 1889.

Synopsis.—(Vol. 1888.) **Alstonia** (p. 11); **Cypripedium** (p. 46); **Hydrochinon** (p. 64); **Pyridin** (p. 85); **Strophanthus** (p. 101); **Thallin** (p. 102).

(Vol. 1889, p. 472.) In cases seen early a sharp **Mercurial Purge**; **Quinine**, grs. ij 4tus hor. until fever subsides; **Antifebrin**, gr. j to iij, first dose usually at 1 p.m. and the second at 5 p.m. each day, this being sufficient to reduce temperature usually; **Carbolic Acid**; ℞ Ac. Carbol. (Calvert's pure solution for internal use), ♏xij, Tinct. Iodi., ♏xvj, Tinct. Aurant. Cort., ʒjss, Syr. Simp., ʒiij, Aq. ad ʒviij, Sig. An ounce every 4 hours during the first fortnight or until urgent symptoms yield, and then thrice a day. If vomiting set in, reduce dose of **Carbolic Acid** and add a small quantity of **Ac. Nitro-hydrochlor. Dil.**; avoid aperients, but an enema of warm soap and water, or a small quantity of castor oil emulsified in water with the yolk of an egg, may be used if necessary. During convalescence small doses of **Belladonna** and **Olive Oil** may be used to relieve bowels; **Magnesium Salicylate**, grs. 1 to c daily as antipyretic, and antiseptic, not contra-indicated by diarrhœa being present; **Caffeine** subcutaneously in collapsed conditions, using **Caffeine Solution** 25% with an equal quantity of **Benzoate of Sodium** to help solution and render it more painless. **Geranium Maculatum** used as rectal injection (p. 42). **Strophanthus**, ♏iij to vj every 6 hours as antipyretic (p. 68).

TYPHUS FEVER.

Synopsis.—(Vol. 1888.) **Cocaine** (p. 40); **Cypripedium** (p. 46); **Lachnanthes** (p. 72).

(Vol. 1889, p. 476.) To procure sleep a warm bath and **Alcohol** are useful. Examine for retention of urine.

ULCERS.

Synopsis.—(Vol. 1889, p. 477.) For ulcers of emaciated, cachectic, and elderly people. ℞ Benzoin Resin, ʒij, Ceræ Flavæ, ʒiv, Adipis, ʒiv, M. Ft. Ung. To be spread on lint and applied. For varicose ulcers a compress or ointment of **Hazeline**, or **Liq. Ext. of Hamamelis** is best For cases of indolent ulcer and syphilitic sores; ℞ Sodium Iodide, ℥ss, Tinct. Myrrhæ, ʒj, Spiritus Rect., ℥ij, Aq. Dest., ʒvj. To make a solution of eight ounces for external application. **Silicate of Soda** for chronic ulcers (p. 65). **Mammea Americana** as remedy for tropical sloughing ulcers (p. 52). **Delphinium Consolida** infusion used internally and externally for obstinate ulcers of feet due to syphilis or scrofula (p. 36).

URETHRA. *E. Hurry Fenwick, F.R.C.S.*

Death from an urethral injection of Cocaine.—Dr. Simes introduced a drachm of a 20 per cent. solution of cocaine into the urethra of a man aged twenty-nine, upon whom he intended to perform internal urethrotomy. Almost instantly the patient made a foolish remark, the muscles of his face began to twitch, the eyes were staring, the pupils dilated, there was frothing at the mouth, the face was much congested, respiration was interfered with; the attack ended in a violent epileptiform convulsion lasting for some seconds. These convulsions were con-

tinued with increasing violence several times a minute, the whole muscular system taking part in their spasms, requiring considerable force to keep him from falling off the table. The action of the heart was not much affected, and seemed to be only secondarily interfered with. It was the respiratory function that appeared first to fail, and then the heart's action became irregular and slow. The breathing was gradually more and more interfered with, the face—in fact the entire surface of the body—became deeply cyanosed; the pulse was slow, and, at the end of twenty minutes from the first convulsion, had ceased to beat. All efforts at treatment proved quite unavailing. Nothing special was discovered at the *post-mortem* examination, congestion of the sinuses of the brain and of the lungs, and distension of the right side of the heart, being the main features.

Is the Gonorrhœal poison a Gonococcus? A case of fatal endocarditis resulting from urethritis in a man aged twenty-eight is recorded.

There were numerous recent vegetations on the mitral valve, and numerous splenic and renal infarcts, mostly suppurating. By Gramm's method, masses of micrococci were found in the vegetations and abscesses, resembling some found in the pus from the urethra, where also a few forms like Neisser's gonococcus were detected.

Treatment of Urethritis.—Dr. Otis avoids specifics in the treat ment of urethral discharges. He believes in deep urethral irrigation with hot water, as advocated by Dr. Holbrook Curtis, of New York. The medicated injections devised by Dr. Curtis in some cases give rise to prostatitis; but better than all, in the opinion of the author, is an injection of **Bichloride of Mercury,** 1 in 40,000 for acute, to 10,000 in chronic cases, given with Kiefer's two-way tube, and using from one to two quarts of the solution at ordinary temperature. This method, suggested by Dr. Halstead, of New York, has met with varied success, many discarding it after a short trial as worthless, others meeting with excellent results. Dr. Otis indirectly reveals both the strength and weakness of the treatment, though without comment, viz., the fact that in from six to ten days the discharge will generally, in fact almost always, become thin, serous, and without colour, but will persist in this state for an indefinite period; or, if it be entirely checked, will relapse into the serous discharge again in twelve to twenty-four hours after the injection is suspended. Dr. Otis very wisely, under these circumstances, advises, when the discharge becomes thin and painless, "a saturated solution of **Boric Acid** or **Potass Permanganate,** gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$ to the ounce, or **Alum** and **Carbolic Acid,** till the cure is complete."

Mr. Berkeley Hill gives the following analysis of the results of

various forms of treatment in one hundred and ten cases of urethritis :—

Among the remedies used were **Soluble Bougies,** containing various drugs in amalgamation: fifty patients had been treated with this remedy, the average number being twelve per patient, although in one case forty-eight bougies were employed. In ten a cure was effected ; two were treated by **Rhatany ;** one by **Sulphate of Zinc** and **Belladonna;** four by **Chloride of Zinc** and **Belladonna ;** and three by **Chloride of Zinc** alone.

Thallin, as prepared in Christy's bougies, was tried in nine cases, with the following result :—None were cured, four were made worse, one was slightly benefited, and four were not improved.

Permanganate of Zinc has been used by Mr. Hill for several years. It was first recommended to him by Dr. Alder Smith, of Christ's Hospital ; he prescribes it in all cases of urethritis, most frequently in the acute form. Notes of its use were taken in seventy cases : ten were cured by it ; in fifty-four it very greatly diminished the discharge ; in four it did no good; and in two it made the discharge worse. Its use was particularly marked by the absence of any irritation. It should not be used in strong solution—one grain in eight ounces of distilled water—and should not be prescribed in conjunction with vegetable extracts, as an almost explosive mixture is thereby produced.

The sulphates of **Zinc, Alumina, Copper,** and **Iron** are most efficacious in the later stages of the gleet. They appear to be easily absorbed, and penetrate deeply into the inflamed tissue. The **Alumina** and **Zinc Salts** appear to combine with the discharge without penetrating deeply in the mucous tissue. **Sulphate of Copper,** on the other hand, penetrates deeper, and must not be used in a strong solution, as it causes slough, which leaves a scar behind it. These notes were taken by observations through the endoscope. **Sulphate of Iron** is of no great value, but usefully affects the three preceding drugs. Twenty-five cases were treated with the four sulphates ; in eight it was the third remedy employed, with four cures and four improvements. Used as the first remedy it cured twice and improved twice. The rest of the twenty-five it either cured or improved, with one exception. In that no improvement was marked. The strength of the solution as commonly used is :—

Sulphate of Zinc	30 to 40 grains	Sulphate of Iron	20 grains
Alum	30 to 40 ,,	Sulphate of Copper	2 ,,
	Water 8 ounces.		

In using solution of **Nitrate of Silver,** small instillations are made on the points of disease previously ascertained. The strength

of the solution is from 5 to 25 grains---5 to 10 minims is the quantity injected. The irritation caused by this injection is unimportant. The effect passes off in a day or two, and must be repeated every third or fourth day until the granular patches no longer exist. Where induration of the submucous tissue exists as well as granular patches, these unyielding parts are stretched in the passing of the bougie before the instillation of the nitrate of silver. The **Nitrate of Bismuth** has but a restricted value as an astringent. In some cases it does good, in others none.

For the value of **Chloride of Zinc** as an injection forty-three cases were analyzed. In seventeen of the forty-three discharge ceased after its use, in nine others it diminished.

Extract of **Belladonna** and extract of **Opium**, long used by the lecturer as sedatives, appear to have but small influence in that direction. **Cocaine** in five per cent. solution, applied before the injection is thrown in, is a very efficient anæsthetic when much pain is caused by the injection. Parenthetically it was remarked that during the acute stages of gonorrhœa, when scalding is severe, the injection of ten per cent. solution of cocaine into the urethra entirely prevents the scalding pain of micturition.

Sinclair submits that the gonococcus may be latent in men and women, remaining in the recesses of the genital canal, and being excited to virulence by the congestion incident to coition or menstruation. To ascertain if the gonococcus is "latent," Sinclair practises the urethral injection of a mild irritant. If the gonococcus is found in the slight discharge thus caused, the individual is capable of infecting another.

STRICTURE OF THE URETHRA.—*Linear Electrolysis.*—M. Fort's treatment, which is a modification of Jardin's, and consists in dividing a stricture on the upper wall by means of electrolysis (compare "Annual" 1889, p. 482) is condemned by Mr. Berkeley Hill and others as being clumsy, painful, and dangerous. Mr. Lavaux affirms that "cures" after linear electrolysis are no more permanent than after divulsion or internal urethrotomy.

For Electrolysis in the treatment of stricture see "Med. Annual," 1889, p. 481.

The use of sounds in Stricture is thus commented on by Mr. Teale: "Let me sum up my own experience of the use of Lister's sounds, which for the last twelve years has been, both in hospital and private practice, most satisfactory. Since their adoption, as far as I can recollect, I have only once had to perform perineal section from inability to get through, or to satisfactorily dilate a stricture. I have never performed internal urethrotomy, nor felt the need of it. Rigors

are extremely rare after the use of Lister's sounds. This rarity of rigor I am inclined to attribute to the fact that in nearly every instance dilatation has been carried at the first sitting up to ten, eleven, or twelve. It is my belief that full dilatation at the first sitting is safer than the older method of partial and gradual dilatation, and for this reason, even in partial dilatation there is frequently some laceration or bruising of the surface at the strictured point. If the stricture be only partially dilated, there remains a narrowing at this sore point sufficient to materially arrest the flow of urine, and therefore there is urinary pressure on the raw surface, whereas in full dilatation the urine flows along the urethra equably and without undue pressure at any point, and puts no stress upon the tender and perhaps lacerated surface of the stricture. In a small number of cases I have failed to introduce Lister's No. 1, but these have been got over by the aid of Teevan's filiform Guide, which in every case was successfully passed. The guide having been introduced through the stricture, its outer end is then screwed into the tip of a conical sound, like Lister's, with the bulb cut off. The filiform bougie guides the solid instrument through the stricture, and thus dilatation up to four or five (Lister) is secured, with the usual easy sequence up to twelve or fourteen."

Mr. Otis and Dr. Wm. White write upon the surgical importance of strictures of large calibre. The latter details some cases of genito-urinary disturbance, gleet, impotence, vesical irritability, in which full dilatation brought about a beneficial result. He advises that in obstinate vesical trouble of the latter character the surgeon should, especially if other means have failed, always try full and complete dilatation of the urethra.

Mr. Reginald Harrison in the treatment of retention due to tight chronic urethral stricture lays stress upon bringing the contracted urethra rapidly up to its normal dimensions and obtaining free urine drainage and thorough cleanliness. He says, "Suppose the operator has succeeded, probably under an anæsthetic, in passing a No. 1 metal English catheter through a densely contracted stricture of half-an-inch or more in length, and that he has verified his position (1) by the escape of urine in drops by the catheter, and (2) by his finger in the rectum. The instrument is firmly grasped by the stricture, and there can be no doubt as to the correctness of its position. Will this expedient serve to meet all the exigencies of the case, even supposing that the urine can be slowly drained off in this way? To tie such an instrument in the bladder, and to leave the urine to drain away indefinitely, is, I am sure, a most hazardous proceeding, though it may be accepted, as an alternative. In all these cases more or less

acute cystitis has been in existence for some days, and the urine is high-coloured, offensive, and loaded with deposit, and what could thus be done would be to drain off the most fluid and least harmful of the contents of the bladder, leaving the more poisonous remainder to add to the mischief already going on in the bladder, ureters, and kidneys. Such a plan usually ends with the death of the patient in a few days of what may with truth be called a catheter fever.

Mr. Harrison advises that when there is no perineal tumefaction to require perineal section, and the catheter is merely persistently grasped within a hard fibrous stricture, other means must be taken at once to bring up the calibre of the urethra to something like its natural dimensions, so that the bladder may be kept thoroughly drained of all its contents. These means consist either in rapid dilatation or in internal urethrotomy. Every care must be taken to prevent the occurrence of any form of urethral septicæmia, as indicated by the occurrence of rigors and fever following the performance of the operation that was selected. As soon as the bladder is emptied with a large catheter, it ought to be thoroughly washed out with a perchloride solution of 1 in 5000; three or four ounces of this fluid are left behind. As a rule, no catheter is tied in. Before the patient is sent to bed the urethra is distended with **Carbolic Oil** (1 in 20), which is well rubbed into the part where section or divulsion may have taken place. Five-grain doses of **Quinine** are given every four hours; in some instances **Boracic Acid** appears to have answered equally well. They seem, by sterilising the urine, to prevent rigors and fevers.

Mr. Thompson gives a case in which he performed suprapubic drainage to cure old standing perineal urinary fistulæ. The case was successful enough to warrant his recommending in cases of long-standing fistula, with considerable riddling of the perineal strictures, in the first place, thorough slitting and scraping or clipping out of all the fistulous tracts; the retention of a catheter through the perineum for several days, so as to prevent the passage of urine along the old paths; and then the opening of the bladder above the pubes by a small incision, so as to divert the urine in that direction. The suprapubic opening should be maintained until there is firm closure of all perineal fistulæ.

REFERENCES.—Simes, "Med. News," vol. liii. No. 3, 1888; Berkeley Hill, "Brit. Med. Jour.," June 29, 1889, p. 1459; "New York Med. Rec.," March 16, 1889; Teale, "Lancet," August 17, 1889, p. 363; Fessenden N. Otis, "The Male Urethra: its Diseases, etc.,"; Fort, "New Method of Treating Stricture"; Cp. "Brit. Med.

Jour.," pt. i. p. 442, 1889; Lavaux, "Annales des Mal. Gen. Urin.," April 1, 1889; White, "Annales des Mal. Organ Gen. Urin.," Nov. 1888; Harrison, "Lancet," Dec. 29, 1888, p. 1267; Thompson, "Brit. Med. Jour." Feb. 9, 1889.

URIC ACID DIATHESIS.

Synopsis.—(Vol. 1889, p. 61.) Pichi Fl. Ext., ♏xv 5j, t.d.

URINE (The).

Robert Saundby, M.D.

The estimation of Albumen in the Urine.—H. Zähor has devised the following method for estimating the quantity of albumen in the urine: A preliminary examination of the filtered urine is made in order to determine approximately the amount of dilute acetic acid necessary to precipitate all the albumen when boiled. This is easily ascertained by taking a small quantity of urine in a test tube, adding acetic acid, and boiling. The urine is then filtered from the coagulum, when the filtrate should yield no further precipitate with acetic acid and potassium ferrocyanide. A convenient quantity of the filtered urine, after the addition of the proper quantity of acetic acid, is then placed in a flask well fitted with a good cork. The flask with its contents is next placed for ten or fifteen minutes in a bath containing water constantly boiling. This brings about the precipitation of the albumen, which is then carefully filtered off into a flask fitted with a cork with a hole in it, through which the funnel is passed. It is advisable to cover the funnel during filtration with a glass plate. The density of the urine and the filtrate is then determined by means of a urinometer graduated to the fourth decimal place. Of course the temperature must be the same for both liquids. This precaution is easily taken by placing them in two glass cylinders immersed in a bath of water kept at a convenient temperature—*e.g.*, 17·5° C. The difference between the initial and final density is then multiplied by the factor 400, the product giving the number of grammes of albumen present in 100 cubic centimetres of the urine. The factor 400 is found to yield by experiment with a number of albuminous urines approximately accurate results, and depends upon the mean value of the specific gravity of albumen, which was found by the author to be 1·3747. It does not, however, appear to yield such good results with fluids containing albumen other than urine ("Zeit. für Phys. Chem.," xii., 484—494).

The determination of Albumen in the Urine.—H. Schaumann ("Zeit. für Anal. Chem.," vol. xxvii., Part 5) has proposed the following modification of the ordinary gravimetric method of estimating albumen. He employs a plug of absorbent cotton wool instead of filter paper, which is fitted into an Allihn's filter tube. The

tube with its plug is dried at 110° C. and weighed. The tube is then fixed on a filter support and connected with a filter pump. The albumen in a weighed quantity of urine is precipitated by heating on a water bath for half an hour after acidulation with acetic acid. The supernatant liquid is poured into the tube and the precipitate washed repeatedly with hot water, and the washings poured into the tube before the precipitate is carefully introduced. It is then washed again by pumping hot water through the filter till the washings no longer give any chloride reaction with silver nitrate. The tube is then closed at the wider end with a cork, perforated to admit a glass tube, and is then placed in an iron drying box provided with apertures at each end in which the tube is fitted. The end having the perforated cork is connected with a calcium chloride tube and a wash bottle charged with sulphuric acid, whilst the drawn-out end is connected with an aspirator. A moderately rapid stream of dried air is then drawn through the tube for an hour ; the temperature of the drying-box is raised gradually to 100° C., and after an hour to 110°. After heating at this temperature, dried air still being drawn through, the tube is weighed every half-hour until the weight is constant. The difference between the weight and that of the tube before being used represents the weight of dried albumen contained in it.

Estimation of Serum Globulin.—Noel Paton has suggested the following method for determining the amount of serum globulin in the urine : The total proteids are first determined by Esbach's method ; 50 ccm. of the urine are then placed in a flask and rendered faintly alkaline with a drop of liq. potassæ ; sulphate of magnesia in powder is then added—the flask being frequently shaken—until a completely saturated solution is produced, and this is allowed to stand in a warm place for twenty-four hours, until the globulin is completely precipitated. The solution is then measured and filtered, and an Esbach's tube is filled up to the mark with the filtrate, the picric acid solution added in the usual way, and the amount of serum albumen determined in the ordinary manner. Five days should be allowed for the precipitate to settle properly. The difference between the amount of serum albumen and the total amount of proteids gives the quantity of serum globulin. The method is fairly accurate ("Edin. Med. Jour.," 1888, p. 522).

(The length of time regarded as necessary to allow the precipitate to settle detracts greatly from the clinical utility of this method.)

The quantitative estimation of Uric Acid.—Dr. Czapek (Hoppe Seyler's "Zeit. für Phys.," Bd. xii., h. 6) recommends a simple modification of Haycraft's method. A measured quantity of the silver solution is mixed with a measured quantity of urine, filtered, and the

amount of silver in the filtrate estimated by titration with potassium sulphide; this method, though simple, has the damning drawback of being very far from accurate, the average error being 10 to 15 per cent. In the same number Dr. Herrmann reports very favourably on Haycraft's method as compared with Ludwig's, for its practicability and rapidity of performance.

On the presence of free Uric Acid in the Urine as a test of the existence of the Gouty State.—Dr. Arnold Schetelig ("Brit. Med. Jour.," 1889 vol. i., p. 1,227) has proposed to determine the quantity of uncombined uric acid present in the urine by first determining the whole quantity present, and then allowing an equal portion of urine to pass through a filter charged with uric acid, the free uric acid being retained by the filter which the water passes through. In gout he finds from 25 to 50 per cent. or more of the uric acid is present in the uncombined crystalline form, and by this means true gout can be detected.

The influence of Phosphate of Soda on the Excretion of Uric Acid.—Dr. A. Haig ("Brit. Med. Jour.," 1889, vol. i., p. 1,227) has found that all specimens of sodium phosphate do not cause an increase in the elimination of uric acid. This effect of the drug was hindered by the presence of acids or acid salts, and he recommended that in all cases it should be combined with a little **Bicarbonate of Soda.** He considered it of special use in the mental depression of the uric acid dyscrasia.

A hint for facilitating the Microscopical examination of the Urine.—When attempting to examine urine under the microscope for casts, epithelial cells, and other organic bodies, a good deal of annoyance and difficulty is sometimes caused both by urates and also, when the specimen is not quite fresh, by fermentation and putrefactive products. In order to obviate this difficulty, and with the further view of preserving the specimen, Dr. M. Wendringer advises that the urine should be mixed with a nearly saturated solution of **Borax** and **Boracic Acid.** This dissolves the urates and keeps the urine from fermenting, and at the same time exercises no destructive effect upon the casts and epithelial elements which it is desired to examine. The solution is prepared by mixing 12 parts of powdered borax in 100 parts of hot water, and then adding a similar quantity of boracic acid, stirring the mixture well. It is filtered while hot. On long standing a small deposit crystallizes out, but clings to the side of the vessel, so that it does not interfere with the transparency of the liquid. The urine to be examined is put into a conical glass, and from a fifth to a third of its bulk of the boracic solution added to it and agitated with it. The

urine will be found to become clear in a short time, *i.e.*, if there is no cloudiness due to bacteria; and it will remain unchanged for several days. If it is only wanted to clear the urine and to make it keep for a day or two, the addition of a smaller quantity of the boracic solution is sufficient. If a third of its bulk is added, no fermentation or putrefactive processes takes place, even if the glass is left uncovered in warm places. Albumen, too, if it exist, is not coagulated. The organic elements—as epithelial cells, casts, blood corpuscles, etc.—collect so quickly, without undergoing any morphological change, at the bottom of the glass, that the first drop taken up by the pipette usually proves a satisfactory specimen ("Lancet," April 6th, 1889).

Detection of Sugar in the Urine.—In studying the question of the significance and detection of traces of sugar in the urine, with some reference to life insurance, the "Dietetic Gazette" concludes that: (1,) Normal urine contains no sugar; (2,) The reducing power of normal urine upon cupric oxide and picric acid is due to uric acid ¼ and kreatinin ¾. Both these bodies are removed by adding to the unconcentrated urine one-twentieth its volume of a cold saturated solution of **Sodic Acetate,** and then one-fourth its volume of a cold saturated solution of **Mercuric Chloride,** after the manner described by Johnson; (3,) Any reduction of either cupric oxide or picric acid after this manipulation is due to the presence of sugar; (4,) Sugar may persist in traces, unaccompanied by the diabetic element; (5,) Diabetes may be warded off by recognition of the first appearance of sugar as a persistent ingredient of the urine; (6,) The importance of this subject to life insurance companies, in view of the facts above stated; (7,) The detection of traces of sugar in the urine requires special skill and care, and a low specific gravity should not be considered conclusive evidence of the absence of sugar.

URINE (Non-retention of in Women). *John W. Taylor, F.R.C.S.*

Important contributions on the treatment of this condition have been recently given by Dr. Nissen, of Christiania, and Dr. Marion Sims, of New York. They have drawn attention to the fact that in many cases the incontinence is kept up by a contracted state of the bladder. The remedy for this is gradual dilatation of the bladder by *injection of warm water.* This may be done with a simple Higginson's syringe, to which a catheter has been attached. Whatever urine is in the bladder should be first withdrawn so that the amount of fluid used for dilatation may be accurately estimated. At each sitting the quantity of fluid is slightly increased until the patient can hold from 15 to 20 ounces.

Twisting the Urethra.—Dr. Gersuny reports the case of a girl, aged fourteen, who was cured by dissecting up the urethra and twisting it through one and a quarter parts of a circle, stitching the urethra securely in its new position. This was not done at once in the case reported, but the rotation was effected by three successive operations. Four months afterwards the cure was said to be complete.

Dr. Boldt, of New York, especially praises the *manual method of Brandt* in the treatment of incontinence. A description of the necessary manipulation is given by him in the "Amer. Jour. of Obst." for June.

It must not be forgotten that this condition frequently depends on fistula, cystocele, or chronic cough. In these cases altogether different treatment is required.

Of drugs, **Belladonna** is by far the most useful. Tinct. **Rhus Aromat.** (5% from bark) ♏ 20 to 25 is recommended by Dr. Max.

REFERENCES.—Sims, "Amer. Jour. of Obst." Sept. 1889; Nissen, by Boldt, "Amer. Jour. of Obst." June, 1889. Max, "L'Union Med." 1888, (See also "Med. Ann.," 1888); Gersuny, "Cent. fur. d. Gesam. Therap." Aug. 1889.

URTICARIA.

W. Allan Jamieson, M.D.

Chronic urticaria is sometimes so obstinate and rebellious to all remedies that the suggestions of M. Nitot are worthy of notice. He considers that there are two varieties of urticaria which require different treatment. The first, which may be either acute or chronic, is the result of slight disturbances of the digestive system, requires dietetic treatment, and is benefited by **Arsenic** and **Alkalies.** The second, which is chronic, or at least frequently recurrent, is essentially of nervous origin, and is relieved by drugs that act on the nervous system, most of all by **Antipyrin.** He gives 8 grains daily, a few hours before the usual time of the attack. ("Jour. de Méd.," March 10th, 1889.)

Synopsis.—(Vol. 1889, p. 483.) When acute use an emetic, *e. g.*, **Zinc, Sulphate** or **Mustard,** or **Apomorphia** subcutaneously. If some time has elapsed since the offending food was swallowed, use a brisk purgative, *e.g.*, **Sod. Sulph., Magnes. Sulph.,** or **Rochelle Salts.** In the subacute form ℞ Magnes. Sulph., ℥ss, Ferri Sulph., gr. xij, Ac. Sulph. Dil., ℥j, Aq. ad ℥iij, Sig. ℥ij well diluted, thrice daily. In gouty cases, ℞ **Tinct.** Aconit. Rad., ♏xvj, Vin. Colchic. Rad., ℥ijss, Pot. Acetat,, ℥ss, Aq. ℥iij-ss, Sig., ℥ij t.d. in water. A slightly warm bath containing ℥ij **Pot. Sulphurat.** in xxx gallons of water may be used and the following lotion: ℞ Ac. Carbolici, ℥j, Glycerini Pur., ℥ij, Sp. Vin, Rect., ℥iij, Aq. Camphoræ, ℥v, M. If eruption recur constantly use **Tinct. Belladonnæ** in full and increasing doses, or better still, **Atrop. Sulph.** gr. $\frac{1}{100}$, and cautiously increased, as subcutaneous injection daily.

UTERINE APPENDAGES (Diseases of the).

John W. Taylor, F.R.C.S.

The Fallopian tube, the ovary, and the broad ligament on each side of the uterus are liable to inflammatory disease; the Fallopian tube most frequently, the ovary less frequently, the broad ligament alone least frequently.

How can we tell, in any given case, which Structure is most Affected?—Inflammation commencing in the tube is usually gonorrhœal in its origin; its onset is acute, and the pain and fever occasioned by its presence are marked. The pain may be one-sided, but is more often hypogastric or general. When the tube is distended with fluid it naturally falls toward the middle line, and the portion most distended can then be felt exactly behind the uterus and usually adherent to it.

Inflammation commencing in the ovary is usually slow and insidious in its progress. It is unaccompanied by fever, but pain is always a prominent symptom. The pain is invariably one-sided or bilateral, generally extending into the leg of the affected side and aggravated by all rough methods of locomotion. The pain is worst before each menstrual period. Other symptoms are obstinate nausea or vomiting, pruritus of the vulva, and menorrhagia. The menorrhagia persists throughout the early stages of the disease, but when the affection has become chronic this disappears and the menstrual discharge is scanty. There is often a curious alternation in the three symptoms of pain, nausea and pruritus, which is almost pathognomonic of chronic ovaritis. The tumour felt on examination is lateral and distinct from the uterus, so that the finger can be placed between the side of the uterus and the tumour.

Inflammation commencing in the broad ligament is usually traumatic in its origin and is therefore apt to occur after parturition or operations in the neighbourhood of the cervix uteri. The swelling is more diffuse than that which is found in simple salpingitis or ovaritis, and, if it does not entirely resolve, tends to become localized about the circumferential limits of the pelvis, often extending to the groin of either side.

Roughly speaking, therefore, the tubal tumour is attached to the uterus; the tumour of cellulitis is attached to the pelvis; the tumour of an ovary is distinct from both. In acute gonorrhœal inflammation of the uterine appendages, however, all these structures, tube, ovary, and broad ligament participate in the inflammatory process, and it is often difficult to say, before operation, what structure we shall find most affected or disorganized. This point is specially considered by the writer in a clinical lecture published in the "Lancet" of Sept. 21st., 1889.

So apt is any pelvic inflammation to involve more than one organ that the same remarks apply (in a less marked degree) to inflammatory processes in the pelvis which are not of gonorrhœal origin. In an interesting specimen of phlegmon of the broad ligament, which was shown at the Obstetrical Society, an abscess of the ovary on the same side co-existed.

What is the exact relation of Gonorrhœa to Inflammatory Disease of the Uterine Appendages?—Most observers are agreed that pelvic inflammation is commonly the result of gonorrhœal infection, which has spread to the pelvis by means of the Fallopian tubes. There is, however, much controversy as to the steps of the inflammatory process. The greater number of those who have studied the subject hold that gonorrhœa is due to the presence of gonococci ("no gonococcus no gonorrhœa"), and that the extension of gonorrhœal inflammation to any given part must necessarily be due to their invasion of that part. Others hold that many of the phenomena of such diseases do not depend so much on the micro-organisms themselves as on the chemical products produced by their presence. Another recent and popular writer claims that the gonococci are only the result of inflammatory changes pre-existing. All, however, are agreed in recognizing gonorrhœa as the important cause of salpingitis and pelvic peritonitis, and the views enunciated by Nöggerath in 1872, are probably more generally accepted at this present date than at any previous time since their first publication. An interesting *résumé* of this subject is given this year (1889) by Schmitt in the "Arch. fur Gyn.," 35, 1, and much of his paper has been well translated in the "Birmingham Med. Review" for August.

So far the inflammatory diseases of the appendages have alone been considered.

But the non-inflammatory or sub-inflammatory diseases to which the uterine appendages are liable may also be separated into tubal, ovarian, and ligamental, and, as such, possess similar methods of differential diagnosis; the tumour formed, so long as it remains pelvic, possessing distinctive characters (as already described) according to the part affected.

In the Fallopian tubes we may find: (1,) Chronic Pyo-salpinx; (2,) Hydro-salpinx; (3,) Hæmato-salpinx; (4,) Extra Uterine Pregnancy. In the ovary: (1,) Commencing cystoma; (2,) Other tumours at an early stage. In the broad ligament: (1,) Hæmatocele; (2,) Cysts of the broad ligament.

Distension of the tubes by serum or by blood, especially the latter, appears to be often due to mechanical obstruction at their uterine extremity. Purulent distension of the tubes may also be sometimes

due to the same cause. *Chronic Pyo-salpinx*, *Hydro-salpinx*, and *Hæmato-salpinx* are accordingly associated with malformations, uterine myomata and chronic syphilis, the association with the latter disease being probably due to gummatous thickening about the uterine extremity of the tube leading to its temporary occlusion. Cases of tubal distension, lasting for weeks or months, and finally disappearing without operative interference, are essentially met with among patients who are suffering from constitutional syphilis.

In *Extra Uterine Pregnancy* the signs of a tubal tumour co-exist with symptoms of early pregnancy. In the first and second months the signs may be closely simulated by retroflexion of the gravid uterus. During the third month rupture is liable to occur, causing dangerous or fatal hæmorrhage. Abdominal section in the removal of the pregnancy is always indicated, and is usually successful.

Hæmatocele of the broad ligament occurs sometimes as a consequence of sudden menstrual arrest, or is found as a sequel to operations involving the broad ligaments. The tumour spreads towards the pelvic circumference, is rapid in its formation, not infrequently extends above the groin of the affected side, and then may manifestly harden before resolution takes place. When hæmatocele occurs on the left side it may encircle the rectum, and this has been described as an important diagnostic feature.

Cysts of the broad ligament, when completely filling one side of the pelvis are extremely difficult or impossible to diagnose from intra-peritoneal cysts which are closely adherent in the same situation. The cystic condition, however, is always very obvious on bi-manual examination, and as the appropriate treatment of both necessitates abdominal section the differential diagnosis is often necessarily left until the time of operation.

The treatment required in gonorrhœal inflammation of the appendages in extra-uterine pregnancy, in tumour of the ovary, and in broad ligament cysts, is mainly operative. In extra-peritoneal hæmatocele, rest alone is sufficient for the cure of the patient. It is in ovarian congestion and prolapse, ovarian neuralgia, and chronic ovaritis, where the powers and patience of both surgeon and patient will be most severely taxed. The most hopeful cases are those which are associated with subinvolution of the uterus after parturition. These cases, which for the time may be quite severe, will usually get perfectly well under the prolonged administration of **Ergot**, as advised in the article on menorrhagia. Other cases, not connected with pregnancy or child-bearing, are often greatly relieved and occasionally cured by the use of **Bromides** and **Hydrastis**. The same remedies are also of great value in chronic

gonorrhœal inflammation where the symptoms are not so severe as to demand an operation. Ovarian nausea and vomiting are very amenable to intra-uterine galvanism, the negative pole being used for the uterine electrode with a low current. Unfortunately the relief of this symptom is often followed by increased pain. The application of the positive pole to the interior of the uterus, and the administration of **Belladonna**, are sometimes very successful in relieving pain. The most fashionable remedies in the present day are undoubtedly **Electricity** and **Swedish Massage**, after the method of Brandt. Whether these will prove to be much superior to older methods of treatment is still undecided. Probably each has its special sphere of usefulness, the exact limitations of which are at present imperfectly understood.

In cases where pelvic pain might be supposed to indicate disease of the uterine appendages, and in which no tumour can be found on examination, it must be remembered that such pain may exist independent of any local lesion, as a result of a strumous, gouty, or other depraved constitutional state. Cases of this description need treatment appropriate to their condition. An open-air life and the administration of **Cod Liver Oil** or other aids to nutrition are important.

In all cases a rational system of dressing, in which the abdomen suffers no compression and bears no weight, will be found of the utmost value.

REFERENCES.—Schmitt, "Arch. für Gyn.," 35, 1; Tait, "Diseases of Women," Richardson, 1889; Lewers, "Obst. Trans.," 1888; Parish, "Amer. Jour. Obs.," July, 1889; Taylor, "Lancet," Sept. 21, 1889; Wylie, "Amer. Jour. Obs.," June, 1889; Apostoli, "Amer. Jour. Obs.," July, 1889; Boldt, "Amer. Jour. Obs.," June, 1889; Gordon, Findley, Taylor, Dixon, "Amer. Jour. Obs.," July, 1889; Kellogg, "Mich. State Med. Soc. Trans.," 1888; Taylor, "Med. Annual," 1889.

UTERINE THERAPEUTICS.

John W. Taylor, F.R.C.S.

DISPLACEMENTS OF THE UTERUS.—The work of Professor Schultze, of Jena, on the pathology and treatment of displacements of the uterus, has been translated from the German by Dr. Macan, and is now open to the study of English readers. It would be quite impossible in the "Annual" to give an adequate idea of the thoroughness and clearness with which the subject is treated. It is emphatically the best book of its kind, and will not only give the reader sound and reliable information, but will enable him to judge at their proper value the various tentative methods of treatment which are from time to time advocated in the periodical literature of the profession.

Many cases of posterior displacement, perhaps the majority of chronic cases, do quite as well without mechanical treatment. For a

pessary to be used with advantage it is important, *(a,)* that the surgeon should understand the position of the normal uterus; *(b,)* that he should be able to replace the uterus in question without force; and *(c,)* that he should recognize that the main object of all retroversion pessaries is to hold or "sling" the cervix back towards the sacrum.

If the use of a pessary permanently increases pelvic pain it is probably pressing against the fundus of the uterus, or against a prolapsed and tender ovary.

Alexander's operation of shortening the round ligaments is slowly becoming recognized as an operation of decided value in suitable cases. Dr. Kellogg reports forty-eight cases and describes a method of operating in which strabismus hooks are used to isolate and hold the ligament. Dr. Wylie has recently published an account of an intra-peritoneal method of shortening the round ligaments. The latter are caught up within the abdomen by forceps "midway between the cornu of the uterus and the pubic bone," The inner side of the ligament is scraped, the "freshened" surfaces folded together and the ligament sutured in this position.

Hysterorraphy.—Dr. Lee reports six cases of hysterorraphy for retroflexion with adhesions. In each case the fundus was separated and raised, two sutures of silk-worm gut were passed through the proximal end of the broad ligament, enveloping the round ligament and firmly tied, then passed through the parietal peritoneum and tied again. Four cases were cured, one case was unsuccessful, and in the other the result was undecided. Dr. Schnecking advocates the suture of the fundus from the vagina. The steps of this operation are as follows: (1,) Disinfect vagina and empty bladder; (2,) Replace uterus in position of extreme anteflexion, and hold it so by sound; (3,) Draw the uterus down firmly so that the os points to the left and the fundus rather to the right; (4,) An assistant "crowds the bladder to the left;" (5,) A stout silk suture is passed by a special needle (made by Loewy, of Berlin), through the anterior vaginal roof, the fundus of the uterus, and back through the vaginal roof. The suture is then securely tied; (6,) An iodoform pad is placed in the vagina. The patient is allowed to sit up in bed in three days and to get up in six days. Twelve cases are reported with eleven complete recoveries. The bladder was included in the ligature in three of the cases, but no harm resulted. The suture was removed from the tenth to the twenty-first day.

Gynæcological Massage and Gymnastic exercises.—All displacements of the uterus are said to be indications for the employment of massage according to the methods of Brandt, but it is in prolapse that the most marked results of this treatment have been recorded.

The method of massage and gymnastics as applied to the treatment of prolapse of the uterus was thus described by Dr. Macan, at his inaugural address to the British Gynæcological Society in January, 1889 :—

"The treatment itself consists of two parts, the first being the elevation of the uterus. To carry this out the aid of a skilled assistant is necessary, whose duty it is with one hand to elevate the uterus from the vagina and to keep it in a state of anteflexion, while his other hand is laid on the abdomen exactly over the uterus. The latter hand indicates to the operator the exact position of the fundus. Standing now at the foot of the couch or sofa on which the patient is lying, the operator lays his two hands strongly supinated, flat on the abdomen, the fingers being pointed towards the pubes, and grasps the fundus between them, its position, as already said, being indicated by the hand of the assistant that is on the abdomen, while the fingers of the other hand of the assistant, which are in the vagina, prevent the fundus being pushed out of reach of the hands of the operator. Having firmly grasped the uterus the operator raises it steadily upwards in the abdomen, in the axis of the pelvis, watching the face of the patient the whole time. This is necessary as the slightest expression of pain is an indication to desist or to go more slowly. In this way the uterus can be elevated as much over its normal level as it had formerly been prolapsed. When the uterus has been elevated as far as possible it is allowed to slip gently from between the hands and sink slowly in the abdomen. The duty of the assistant is now to receive the uterus as it descends on his finger which has remained in the vagina, and to keep it in a condition of anteflexion. This movement of elevation is repeated two or three times at each sitting, a few minutes' interval being allowed between each, during which time the assistant massages the fundus in order to arouse it to contraction and thereby lessen its bulk. The second movement now follows, and consists of forcible separation and forcible closure of the knees. To carry it out the patient should be placed in the exaggerated stone position, and closing the knees and thighs, should elevate the sacrum from the couch so that the body rests on the elbows and feet only. While in this position the operator forcibly separates the knees, the patient resisting as much as possible. This is repeated about three times. The contrary movement is now practised, the patient lying with the knees widely separated and the operater bringing them forcibly together. This is also repeated three times and closes the sitting. The patient now turns over gently on the face and remains in that position for from five to ten minutes. It is well, when it is possible, for the patient to remain in the recumbent position for the

first few days of the treatment, but this is not essential. The treatment is repeated daily till the cure is effected, the time required varying greatly, but being usually from four to eight weeks."

Fuller details are given by Dr. Boldt regarding the various applications of this treatment, and the special manipulations necessary for its successful employment. Unfortunately, the subject is one which has already excited somewhat passionate controversy, and (as in the case of electricity in gynæcology) this must inevitably tend to obscure it and retard an accurate judgment of its value. It is noteworthy that Professor Schultze considers that our therapeutics have been enriched by the knowledge of Thure Brandt's method of mechanical treatment, and several gynæcologists are now engaged in careful investigation of the subject.

REFERENCES.—Schultze, The Path. and Treat. of Displacement of the Uterus; H. K. Lewis, 1888; Kellogg, "Jour. of the Amer. Med. Assoc.," Dec. 8, 1888; Wylie, "Amer. Jour. Obst.," May, 1889; Alexander, "Brit. Gyn. Jour.," Nov. 1885; Bode. "Cent. fur. Gyn.," Jan. 19, 1889; Lee, "Amer. Jour. Obst.," Dec, 1888; Schnecking, "Ger. Gyn. Soc.," Sept. 19, 1888; reported in "Amer. Jour. of Obst.," Jan. 1889; Boldt, "Amer. Jour. of Obst.," June, 1889; Macan, "Brit. Gyn. Jour.," May, 1889; Jones, "Brit. Gyn. Jour.," May and August, 1889.

Myoma.—Besides **Ergot, Hydrastis,** and the **Bromides,** which are used to restrain the hæmorrhage so frequently due to myoma, the use of infusion of **Cotton-root Bark,** has been recently recommended by Dr. Garrigues and Dr. Prentiss. In a case reported by the latter, pain due to the myoma is stated to have been greatly relieved by its use. Three teaspoonsful of powder to a pint of water were used in the preparation of the infusion, which is freshly made every day, and divided into three doses for the day.

The use of the *curette* has been frequently recommended by American writers to check the metrorrhagia of myoma. This metrorrhagia is said to be due to a co-existing endometritis rather than to the presence of the myoma, and when this is the case curetting may greatly relieve all urgent symptoms. This recommendation receives support from an article in the "Archiv. für Gyn.," in which curetting with the sharp spoon, followed by intra-uterine injection of **Iodine** with Braune's syringe, is highly spoken of in the treatment of bleeding myoma. This use of the curette is often favourably compared with the treatment by *galvanism after the method of Apostoli*, but any one who has experience of the latter will know that this is very different, both in character and results. Whatever may be the final estimate of the

value of electricity in the treatment of gynæcological disease, there can be no doubt that much of its action is peculiar and uncovered by other modes of treatment. The stenosed condition of the whole uterine cavity, which is produced by repeated intra-uterine applications of the positive electode is not paralleled by the result of any other therapeutic measure.

The treatment of myoma by electricity is fully described by Mr. Skene Keith, and to his paper the reader is referred for particulars relating to this branch of therapeutics.

Removal of the Appendages for myoma is deservedly the most popular method of treatment among English surgeons. In nearly every list of abdominal sections this operation takes an important position and its success is very satisfactory, the mortality being only about four or five per cent. If it could be utilized for every case of myoma the operation would have but little to be desired. Unfortunately, in a certain percentage of cases the appendages are found to be inaccessible, and in a very small minority of cases the growth of the myoma is found to be unchecked by their removal.

Hysterectomy, or rather Supra-Vaginal amputation of the uterus is not so frequently performed for myoma as it used to be : the treatment by removal of the appendages and by galvanism having largely superseded other methods. A few surgeons, however, continue to amputate the uterus with moderate success, Drs. Bantock and Tait being the chief English exponents of this practice. In a few cases the operation may be one of necessity, and it is therefore important to find the best way in which to perform it.

All English operators at present appear to use the extra-peritoneal method of treating the stump, but few statistics have been given of recent years from which reliable conclusions can be formulated. More experimental work is being done in America, and during the past year the following descriptions have been given of individual practice in the treatment of the stump after "hysterectomy."

Dr. Wylie : "I first tie the broad ligaments with silk, then put on the wire, hugging close the muscular tissue of the uterus. Before tightening the wire I take two extra pieces of silk, pass them through the broad ligaments and through the loop of wire, one on either side, then tighten the wire and also the silk. Thus we have three stumps." (Dr. Wylie's intention by this practice is to completely close the broad ligaments on each side of the uterine stump and so prevent the possibility of purulent infiltration into the tissue of the broad ligament.)

Dr. C. C. Lee : "I have observed better results from the *clamp* than from any form of écraseur. Of eleven cases I have lost only one."

Dr. Polk, (ten cases; one death reported): "The broad ligaments are ligatured, as practised by Keith, and the tumour is enucleated as low as the site of the proposed amputation. The wire clamp is then adjusted around the base of the enucleated tumour, and therefore, inside the peritoneal covering of the tumour. The tumour is cut off and the uterine "sac" with stump at its base, is sutured to the abdominal wound and drained."

Dr. Price: "The peritoneal covering of the stump, both above and below the wire, is stitched to the abdominal peritoneum."

Dr. Mundé, (seven cases and two deaths): "The elastic ligature is used, and pins, securing the peritoneum around the pedicle below the ligature."

Dr. William Goodell, (six cases treated by the intra-peritoneal method—all successful): "The pedicle is transfixed with a double ligature and tied on either side provisionally. The tumour is then cut off and the pedicle scooped out so as to be funnel-shaped. Each ligature is now untied and retied tightly. The peritoneal edges of the stump are sewed closely together and the pedicle is dropped."

Dr. Kelly, (combined intra- and extra-peritoneal operation—one case, made an easy recovery): "In this case the pedicle was treated at first, as in the intra-peritoneal method, by careful suture. The uterine arteries were secured on each side by special ligatures and the stump, instead of being dropped, was sewn into the lower angle of the abdominal wound, the line of sutures used for this purpose being below the level of the united tips of the stump, but above the ligatures of the uterine arteries."

REFERENCES.—Schultze, "Wien. Med. Blät.," pp. 20, 21; Mckee, "Amer. Jour. Obs.," Oct., 1889; Prentiss, "Amer. Jour. of Obs.," Dec., 1889; Ringer, "Arch. für Gyn.," No. 34, p. 3; Wylie, Lee, Polk, Price, Mundé, Goodell, Kelly, "Amer. Jour. of Obs.," 1889, pp. 628, 1104, 1187, and 1202.

Amputation of the Pregnant Uterus (Porro's Operation), and Cæsarian Section.—Both of these operations are meeting with a very gratifying amount of success. Nine cases of Cæsarian section in the practice of Drs. Lusk, Kelly, Garrigues, and Polk, resulted in five recoveries of the mothers and five recoveries of the infants. A recent case has just been reported of Dr. Horrock's, in which both mother and child are said to be doing well. The main improvement in the technique of the operation which appears to be largely responsible for the increased success is the union of peritoneal surface to peritoneal surface in the suture of the uterine wound. But Porro's operation appears to be still more successful than the new Cæsarian section, and can be

performed as an emergency operation more easily and expeditiously.

The following is Mr. Tait's description of the operation: "No special instruments are required—nothing but a knife, some artery forceps, a piece of rubber drainage-tube, two or three knitting-needles, and a little perchloride of iron. My method of operating is to make an incision through the middle line large enough to admit my hand, and then I pass a piece of rubber drainage-tube (without any holes in it) as a loop over the fundus uteri, and bring it down so as to encircle the cervix, taking care that it does not include a loop of intestine. I then make a single hitch and draw it tight round the cervix, so as to completely stop the circulation. I give the ends of the tube to an assistant, who keeps them well on the strain, so as to prevent the loose knot from slipping, the reason of this being that should there be any bleeding and any necessity for further constriction, I could secure this in a moment, without undoing any knot, and the simplicity of this method greatly commends it. I then make a small opening in the uterus, and enlarge it by tearing with my two forefingers, seize the child by a foot and remove it. I then remove the placenta, and by that time the uterus has completely contracted, and it is easily drawn through the wound in the abdominal wall. The constricting tube will now probably require to be tightened, and the second hitch of the knot may be put on at the same time, and the work is practically done. Stuff a few sponges into the wound to keep the cavity clear of blood, and pass the knitting needles through the flattened tube and through the cervix, and in this simple way a clamp of the most efficient kind is at once made. The uterus is removed about three-quarters of an inch above the rubber tube. The usual stitches are put in, the wound closed round the stump, which, of course, is brought to the lower part of the opening, and then the stump is dresssd with **Perchloride of Iron** in the usual way. The operation takes far less time to perform than it takes to describe, and as there is hardly any possibility of complications, it is one of the simplest operations that can be undertaken, and must always be pretty much the same; for this reason no one need be in any fear about undertaking it, for in the absence of variation in the difficulties to be encountered, it differs entirely from any other operation in abdominal surgery."

Inversion of the stump as a final detail in the performance of a Porro's operation is recommended by some of the German operators. Frank has reported two successful cases in which this method was employed, the one case being in a dog, the other in a woman. After the uterus was cut off the margin was ligatured with long sutures, and by traction on these from below inversion was produced.

REFERENCES.—Horrock, "Brit. Gyn. Jour.," Nov., 1889; Lusk, Kelly, Garrigues, and Polk, "New York Med. Jour.," Dec. 22, 1888; Lawson Tait, "Brit. Med. Jour.," Nov. 17, 1888; Frank, "Cent. für Gyn.," 1888, No. 25. p. 605; Beaucamst, "Germ. Gyn. Soc.," Sep. 1888.

Chronic Endometritis.—Some recent writers have commented on the necessity of free drainage in the treatment of chronic endometritis. In cases where the uterine cavity becomes converted into a chronic abscess, Dr. Duke recommends the use of a spiral wire stem after dilatation and curetting.

Dr. Polk advocates the packing of the uterine cavity with **Iodoform Gauze** after dilatation; a treatment very similar to that which has for a long time been used by Prof. Vulliet, of Geneva. Dr. Polk especially recommends this for cases of endometritis fungosa. These however are so successfully treated by the use of the curette that no other method of treatment is needed.

In purulent endometritis a thoroughly satisfactory means of drainage is undoubtedly a desideratum.

The tampon as a means to diagnosis is recommended by Prof. Schultze. An accurately fitting tampon is allowed to remain for twenty-four hours in immediate contact with the cervix, which has previously been thoroughly cleansed. On removal, if the uterus be healthy, a small clear drop of cervical mucus will be found upon the tampon. A purulent discharge, on the other hand, will indicate catarrhal inflammation of the mucous membrane.

Dr. Mckee states, "in sterility from chronic cervical endometritis I have had good success from painting the cervical canal with a solution recommended to me by Dr. Clement Godson, of St. Bartholomew's Hospital. This consists of perchloride of iron, 1 part; glycerine, 3 parts. A cure often results and conception is not infrequent."

REFERENCES.—Duke, "Brit. Med. Jour.," Feb. 14, 1889; Polk, "New York Med. Jour.," Dec. 29, 1888.

Puerperal Endometritis.—Dr. Grandin writes in recommendation of the use of the dull curette as a regular method of treatment in puerperal endometritis, contrasting its use favourably with the treatment by frequent intra-uterine injections. His practice is described as follows: "As soon as fœtor of the lochia appears I proceed to carefully differentiate its source. Without going into the details of a differential diagnosis, let the statement suffice that a thorough vaginal douche of boiled water or of some antiseptic solution will cause this fœtor to disappear should it be due to the decomposition of a clot, we will say, in the vagina. If, after the lapse of a few hours, the fœtor reappears, I administer at once an intra-uterine douche in view of the

fact that the cause may be the retention within the uterus of a clot, or of loosened *débris*. In case, notwithstanding this douche, the fœtor reappears, then I believe that the time for active treatment has come, and, having determined bi-manually the position of the uterus, I place the patient in Sim's position, insert the speculum, hook a tenaculum in the anterior cervical lip to steady the organ, insert the curette curved to the requisite degree into the cavity, and thoroughly scrape every portion of the endometrium. I have thus literally removed handfuls of the degenerated *débris*. When I am satisfied that the curetting has been thorough enough, I turn the patient on her back, insert the uterine tube, and wash out the cavity. In my experience, it has never been necessary to repeat the curetting, and rarely has an additional douching been called for. In certain aggravated instances of septic endometritis which I have seen, where the fœtor was intense, the pulse rapid, and the aspect bad, there has been such marked improvement within twenty-four hours after the removal of the putrid products by the curette that it was difficult to realize that I was dealing with the same patient."

REFERENCE.—Grandin, "New York Med. Jour.," Feb. 16, 1889.

Amputation of the Cervix.—Dr. More Madden advocates this operation in stellate lacerations with great hypertrophy of the injured cervix in preference to Emmet's operation. The method recommended by him and usually adopted is removal by the wire écraseur, the cervix being well drawn down by a strong volsella, and the neck of the uterus transfixed by a stout wire ligature above the wire of the écraseur. The same operation is of great utility in the early stages of carcinoma of the cervix and in some cases of non-traumatic hyperplasia and chronic parenchymatous cervicitis.

REFERENCE.—More Madden, "Dub. Jour. of Med. Sci.," March, 1889.

UTERUS (Cancer of). *Wm. Walter, M.A., M.D.*

Concerning the early diagnosis of cancer (*vide* "Med. Ann.," for 1889), it is well to sound a note of warning, as the possibility of removing the uterus for a disease that may not prove to be malignant is very real. Unless therefore the physical signs are well marked, hysterectomy should not be performed until a skilled microscopist has examined a carefully removed piece of the diseased tissue, repeating the examination more than once if any doubt exists as to the correctness of the diagnosis. Too much stress cannot be laid upon this matter, for it is a commonly expressed opinion that many cases of hysterectomy have already taken place under the mistaken belief that cancer existed.

The feeling in favour of total hysterectomy over the high amputation of the cervix for cervical cancer is gaining ground, partly on account of the probably longer immunity it affords from a return of the disease and partly because there have been found in the endometrium certain histological changes of a sarcomatous nature, though the disease was apparently limited to the vaginal cervix.

During the past year the mortality of vaginal hysterectomy for cancer has decreased, and may now be quoted at about 10 per cent; a few operators have been even more successful, showing a death rate of only 5 or 6 per cent. It is needless to say that much depends upon the care taken in selecting the cases.

If the supra-vaginal portion of the uterus is diseased, the operation is apt to prove more dangerous, and great difficulty may be experienced in exercising sufficient traction on a friable organ, especially if the fundus is much enlarged.

Senile atrophy of the vagina was recently found by the writer to cause almost insuperable difficulty in drawing down the uterus within reach of the fingers. There have doubtless been cases of cancer of the uterus where the operation for total hysterectomy was commenced in the firm belief that the disease had not spread into the adjoining tissues; and yet on opening the anterior or posterior vaginal fornix, nodules of disease have unexpectedly been discovered upon the surface of the peritoneum, either on the posterior wall of the bladder or in the broad ligaments. In some of these cases the mobility of the uterus had not become impaired, and so no evidences of disease outside the uterus could be detected until after the peritoneal cavity was opened.

In the opinion of the writer it might be well, in all cases where the supra-vaginal portion of the uterus is affected with cancer, to commence the hysterectomy operation by opening the posterior fornix sufficiently to permit a finger being passed into Douglas' pouch for the purpose of ascertaining the freedom of the peritoneal surface from disease.

If the peritoneum or lymphatics were found implicated the incision should then be closed and the proposed operation abandoned.

UVULA, Elongated. *P. Watson Williams, M.B.*

This is generally associated with chronic pharyngitis, but may occur as the result of paresis of the soft palate independently of any abnormal condition of the pharynx.

The uvula is almost invariably more or less relaxed in chronic pharyngitis; and, while the elongation in some cases gives rise to no symptoms, it generally increases the unhealthy condition apart from

any of the exciting causes which initiated the mischief, often producing alarming symptoms and requiring special treatment.

Labus of Milan very conveniently classifies the cases under two heads, viz:—

Class I.—Those in which the uvula and soft palate are merely relaxed, otherwise remaining normal in appearance, there being no congestion or hypertrophy.

Class II.—Those in which there is hypertrophy and chronic congestion of the soft palate and fauces, often resulting in degeneration of the glandular structures of the naso-pharyngeal mucous membrane, and associated with severe constitutional disturbance. In these cases a varicose condition of the veins at the back of the tongue frequently results from continual irritation and prolonged congestion. Examples of these varieties are illustrated on pages 520 and 521 from cases occurring in our clinic.

In the simpler cases, where there is merely relaxation of the uvula and soft palate without hypertrophy or congestion, the symptoms are mainly impairment of the quality and strength of the voice, and are chiefly observed in professional singers.

Labus, as the result of observation in one thousand one hundred and thirty-two cases of professional singers who applied to him for treatment, found that the alteration and impairment of the voice were frequently due, not so much to the mere elongation of the uvula, as to the paresis which resulted, preventing the proper and necessary movements of the uvula in singing high notes, and leading to forcing the voice, which becomes flat and tremulous and quickly tired. If the voice be still much used the constant strain may lead to chronic congestion and hypertrophy, and the case passes into the grave type. In a marked case the patient usually complains of continual hawking, with a feeling of some foreign body in the throat that cannot be coughed up, often likened to a hair or fish-bone in the throat. The cough may be very severe, especially at night on lying down and on rising in the morning, often accompanied with nausea, and ending in vomiting from the tip of the uvula tickling the back of the tongue.

A patient, recently under our care at the Bristol Royal Infirmary, appeared, when admitted, to be far gone in consumption, and in fact, had been treated for tuberculosis of the lungs by his medical attendant. He was very feeble and emaciated, and had *râles* over the whole of both lungs. Symptoms pointed to elongated uvula. His uvula was partially ablated and the subsequent improvement and final recovery was rapid. He gained three pounds in weight in the first fortnight. Nor is it surprising that the loss of sleep and frequent vomiting should

result in great emaciation and weakness, which, in association with cough, with expectoration of mucus streaked with blood from the pharynx, should lead one to suspect that the patient is suffering from tubercular disease of the lungs, especially in those who also complain of localized pains in the chest—pains which are purely reflex in origin.

The amount of blood that may be lost in this way is very great. One patient, at the Bristol Royal Infirmary, had coughed up blood every morning for nine months, varying in amount from a teaspoonful to a cupful. His uvula was removed, and he rapidly recovered.

Another patient suffered from severe and urgent attacks of dyspnœa on lying down at night, in addition to other minor symptoms, and thought to be due to some serious laryngeal affection. The dyspnœic attacks were the result of spasm of the glottis, caused by an elongated uvula; removal of the uvula prevented a recurrence of these alarming attacks.

A variety of causes may lead to this elongation of the uvula, the commonest cause being the using of the voice during catarrhal attacks —a time when all the tissues of the naso-pharynx are congested and weakened; it is therefore most frequently found in those with whom speaking or singing is a means of livelihood or profession, such as clergymen, schoolmasters, actors, etc.

The paresis of the soft palate is probably due to peripheral neuritis of the posterior palatine nerve from compression at its exit from the posterior palatine canal, containing the motor nerve fibres for the levator palati and azygos uvulæ, as well as the sensory nerve supply for the velum palati, and being exactly analogous to Bell's paralysis due to cold, and resulting from compression of the facial nerve at its exit from the stylo-mastoid foramen. Woakes points out that this implication of the posterior palatine nerve accounts for the paresis of the soft palate so frequently associated with "necrosing ethmoiditis."

Another frequent cause is nasal obstruction, causing the patient to breath through the mouth. Minor degrees of nasal obstruction are frequently overlooked; compelling the patient to sleep with the mouth open, he wakes in the morning with a dry parched tongue. It is not surprising that slight, but oft repeated, attacks of naso-pharyngeal congestion should result from this unnatural respiration.

Acute pharyngitis and other predisposing conditions are numerous: such as chronic portal congestion, chronic gastric catarrh, alcoholism, the tobacco-habit, phthisis and chronic bronchitis, breathing in crowded rooms and dusty atmospheres.

In treating cases of relaxed uvula, it is well to give local astringent applications a fair trial, especially in the milder cases. These must be applied to the back of the soft palate and the posterior nares as well as to the fauces.

Fig. 49.

Showing the retraction of the normal uvula in the production of a high pitch pure tone.

When local applications have failed, the uvula ought certainly to be partially removed. In the severer cases it is better to do this little operation at once. In properly selected cases there is no simple operation which is more urgently called for, and which brings about such excellent results in so short a time.

Cases of elongated uvula, pure simple relaxation, are not always easily recognized. In doubtful cases the patient should be directed to open the mouth and breathe quietly. At first the uvula will be partially retracted into the soft palate, but, if "elongated," it soon drops, and the tip rests on the back of the tongue. On striking a high note, the normal uvula is almost completely drawn up into the soft palate, which is raised (*vide* Fig. 49), but the relaxed uvula is shortened in wrinkles of redundant mucous membrane (*vide* Fig. 51). The redundant translucent mucous membrane is obvious along the free edges of the velum and at the tip of the uvula.

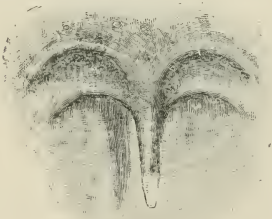


Fig. 50.

Is an example of simple elongation of the uvula without hypertrophy (Labus' Class I).

Fig. 51.

The same on striking a high note, showing the unnatural wrinkling of the mucous membrane.

We have had a large number of cases, and have always obtained good results by ablation of the uvula. Labus, as the result of his

extensive experience in ablation of the uvula in professional singers, was convinced that when carefully done, so as only to remove the abnormally elongated portion of the uvula, the operation produced no deterioration, but almost invariably a marked improvement, in the quality of the voice.

Fig. 52.

Represents an elongated and hypertrophied uvula (Class II).

In all cases the nasal passages should be examined for obstruction. If obstruction exists, it must be appropriately treated, if a good result is to be obtained and a permanent cure effected.

VARICOCELE AND HYDROCELE. *Walter Pye, F.R.C.S.*

A general statement as to the present practice of English surgeons in the treatment of varicocele by Mr. Bennett, of St. George's, is to be found in the "Lancet" of 9th Feb., 1889. The account is a long one, and contains much that is matter of common knowledge, but there are also many suggestive points. Hydrocele is believed by him to be always congenital, probably often accentuated by constipation, but not so caused. It rarely attracts attention before puberty, and is almost always troublesome before five and twenty, if at all.

The condition of the testis is important; it is small and soft. This is not due to wasting, but to arrested development, and after operation may be recovered from.

In respect of treatment, the great majority of cases do quite well with a simple suspender, of which the old-fashioned linen one is the best pattern; but a disability for certain occupations attaches to the presence of a varicocele, and further, its existence appears in many

cases to be a marked trouble and anxiety to the patient out of all proportion to its really slight importance. In cases of double varicocele, the impairment of the nutrition of the testes is a strong argument for an operation for cure. Altogether, although the operation is one of expedience only in almost every case, in a considerable number it is wise to perform it.

Operations for varicocele are divided into *open* and *subcutaneous* ones. The latter used in former times to be preferred, and was managed in various ways. Ligatures were passed round the veins, or the veins were divided between ligatures, temporary or permanent, by a thin knife, or the veins were obliterated by compression with hair-lip pins, etc. Whatever plan for subcutaneous operation was adopted, there was never a certainty that all the varicose veins were fairly included, and there was also a certain risk that one or more of them might be punctured in the passage of the ligature. This danger is completely avoided by exposing the veins by means of an incision of about 1½ inches in length. The mass of veins is easily exposed and should not be denuded of its fascia.

A single ligature may be applied with an aneurysm needle, and will often effect a cure; or two ligatures at a little distance from each other, the varicocele being divided between them; or two ligatures may be passed so as to include a considerable quantity of the varicocele, which can then be excised.

Mr. Bennett advocates this last operation, but, in addition, he advises that in all cases where the testis hangs low down, that the ends of the carbolised tendons (which he uses for ligature) which are firmly tied round the upper and lower stumps of the excised veins, should be tied together so as to practically shorten the cord, and thus raise the testis to its proper level.

The ligature round the proximal end of the varicocele should not be tied tight until the veins have been divided.

Mr. Bennett condemns the practice of excising a portion of the scrotal walls with the object of bracing up a pendulous testis, believing that this removal altogether fails to effect its purpose. A suspender should be worn until all the thickening which results from the operation has subsided.

With regard to hydrocele of the tunica vaginalis, surgeons still seem dissatisfied with the treatment by injection, and to be hunting about for some more certain procedure. Complete excision of the tunica vaginalis is too severe a measure to find much favour, but free incision with drainage or packing of the vaginal cavity is not infrequently performed. Dr. Hertzberg, of Tübingen, in the "Beitrage zur Klinische

Chirurgici, has published a list of forty-six cases, in which this was the treatment adopted. The results, as far as relapse is concerned, compare somewhat favourably with those obtained by the iodine treatment, the percentage of relapse being between 2 and 4 per cent., while, after iodine, Dr. Hertzberg states it is as high as 8 per cent.

In eight cases, however, much constitutional disturbance followed the operation; the tendency in England appears to be to reserve this active treatment for stubborn relapsing cases.

VERMIFORM APPENDIX. *A. W. Mayo Robson, F.R.C.S.*

Under the surgery of the vermiform appendix it is convenient, although perhaps not strictly accurate, to include the form of localized peritonitis which is known under the names of typhlitis, perityphlitis, paratyphlitis, and appendicitis.

Probably in the greater number of these cases of localized peritonitis, the vermiform appendix is the starting point of the trouble. This especially applies to the relapsing forms of typhlitis, as has been shown by Mr. Fredk. Treves. In other cases, the inflammation may be associated with some form of ulceration of the cæcum.

The cases may be broadly divided into two classes. In the first, pain and tenderness in the right iliac fossa, with a sense of fulness and the early development of induration are usually found; fever of various degrees and vomiting are often present; constipation usually precedes the attack. The patient generally lies on his back with the right thigh flexed. Under absolute rest, local depletion, warm fomentations, and the administration of opium and belladonna, these cases usually completely recover, and that without any serious complications; but, unless care is exercised until the tenderness has quite disappeared, relapse will be probable. Sometimes however, despite treatment, at the end of the first or second week suppuration may occur and will demand surgical interference.

In order to determine the presence of pus, the exploring syringe may be employed, but it must be borne in mind that its use is not absolutely free from risks, as the needle may be thrust into the inflamed and ulcerated cæcum, and set up a suppuration which previously did not exist.

In the second class of cases, perforation of the vermiform appendix or of the cæcum is present, and the first symptom is usually intense and excruciating pain accompanied by shock, which may be so severe as to cause death within a few hours, or in the first two days. If the patient rally, general peritonitis may supervene and lead to death within the week, but if the peritonitis become localized, an encysted peritoneal abscess may form, which if not evacuated may rupture internally

within the fortnight, producing general suppurative peritonitis; but should the abscess burst externally, the patient will be relieved, at all events for the time, and in some cases the opening may ultimately close, whilst in other cases a fæcal fistula will be left, or death may occur from exhaustion due to the continuous discharge of pus.

As the abdomen becomes distended, induration or even fulness in the region of the cæcum at times cannot be felt, for the appendix usually lies beneath the bowel.

The symptoms are not always so well defined; vomiting may be less marked than in cases of typhlitis, and may be only induced through errors of feeding. Intestinal colic with febrile reaction, and tenderness in the right iliac region with the absence of a tumour, and without marked constipation, may so mislead as to make it difficult to give a correct prognosis until the sudden onset of peritonitis reveals the true nature of the disease. In proportion as the tumour, prominence, induration, and dulness are marked, delay is safe, especially, as pointed out by Dr. Pepper, if rectal examination does not indicate any fulness on the right side of the roof of the pelvis; if this be present, it indicates a mass of exudation which will not resolve, and is therefore a certain indication for operation. Early and oft-repeated rectal examination is the most important diagnostic means we possess in these cases.

The treatment at first should be by rest, and the administration of subcutaneous injection of morphia. Food should be sparingly given, and that in a liquid form. Aperients should be avoided. If resolution do not occur, and there be no urgent symptoms, with an absence of fulness in the roof of the pelvis on rectal examination, delay is justifiable; it must be remembered, however, that the majority of cases that die, die soon, and that if operation is to succeed, it must be undertaken early. Dr. Fitz recommends operation on the third day, but on this point there can be no absolute rule, and if after waiting a few days there be no indication of the commencement of resolution, operation is indicated. Probably the best operative procedure is to make an incision over the tumour, and to provide for effective drainage of the localized peritoneal abscess. If the peritoneal cavity be opened, it must be irrigated and drained, after the perforated appendix has been ligatured at its base and removed. It is probably better to "tuck in" the serous coat, and suture it over the cut mucous membrane. Fitz in his valuable monograph, which is based on two hundred and fifty-seven cases of perforating appendicitis, with two hundred and nine cases of typhlitis and perityphlitis, shows that the most common cause of encysted peritonitis is perforative inflammation of the vermiform appendix. He also shows that in 11 per cent. of the cases the

patient is subject to relapse. Mr. Treves read an interesting paper at the Leeds Meeting of the British Medical Association, 1889, reviewing the whole subject of typhlitis: he proposes in cases of relapsing typhlitis to perform laparotomy and remove the vermiform appendix, in the period of quiescence following an attack. The operation has been attended with success in Mr. Treves' hands and in cases under the care of Mr. Lawson Tait and other surgeons.

Dr. Robert F. Weir, in a paper read before the Medical Society of the State of New York, urges, from his own experience and study of recorded cases, that in the large majority of cases the abscess, which is due to inflammation or perforation of the cæcal appendix, is *intra*-peritoneal. His conclusions are given as follows, and are stated to be "based on observations of one hundred *post-mortem* examinations, and from thirty-two personal operations for so-called perityphlitic abscess."

(1,) That all such abscesses originate in the peritoneal cavity, and there develop to an appreciable size before invading extra-peritoneal tissues or viscera; (2,) That, as stercoral accumulations or cæcal perforations are so rarely met with as causes of perityphlitic tumour or abscess, they should not be considered from a clinical view in any given case; (3,) That, in an attack of perityphlitis originating, as it generally does, as a perforation, or as a gangrenous condition of the appendix vermiformis, all use of purgatives or enemata is in the beginning of a case to be avoided, and the immobilisation of the patient is to be insisted on and aided, if necessary, by anodynes; (4,) That if a tumour be found, it be opened by a lateral incision as soon as symptoms, constitutional or local, indicate the formation of pus; (5,) That if symptoms indicating an increase of the local peritonitis, such as the persistence of vomiting, spreading pain, abdominal resistance, and temperature elevation, continue, with or without the formation of tumour, for forty-eight hours, the danger of the disease is greater than the proposed lateral or median laparotomy, which should then be immediately resorted to; (6,) If a general peritonitis be suspected, corroboration can often be obtained by abdominal aspiration with a fine needle employed in places other than in the right iliac fossa, and particularly by a deep, hypogastric puncture into the pelvis, the bladder being first emptied. However, if left in doubt, it is better to operate; (7,) [*Sub judice.*] That if general suppurative peritonitis be found at a laparotomy, lateral or median, avoid too much handling of the intestines, and trust to either temporary irrigation with large glass tubes (Tait's), or to permanent or repeated irrigation and fluid distension of the abdominal cavity; (8,) [*Sub judice.*] To meet the obstruction symptoms due to septic paralysis of the bowels, which often persists after a laparotomy

for suppurative peritonitis, saline purgatives and repeated washing out of the stomach should be resorted to, even though vomiting be present to a marked degree. Enterotomy may also, in exceptional cases, be entertained.

REFERENCES.—Fitz, "Inter. Jour. Med. Soc.," Oct., 1886; Pepper, "Philadelphia Med. News," Jan. 27, 1888; Treves, "Roy. Med. Chir. Soc.," Feb. 14, 1888; "Lancet," p. 267, vol. ii, 1889, and "Brit. Med. Jour.," Nov. 10, 1889; Dreschfeld, "Med. Chron.," Nov., 1887; Bull, "Brit. Med. Jour.," Nov. 10, 1888; Lawson Tait, "Brit. Med. Jour.," p. 763, vol. ii, 1889; Mc.Dougill, "Annals of Surgery," p. 78, vol. ii, 1889; Alderson, "Brit. Med. Jour.," p. 246, vol. i, 1889; Spauton, "Brit. Med. Jour.," p. 126, vol. i, 1889; Krafft, "Brit. Med. Jour.," p. 101, vol. i, 1889; also, "Brit. Med. Jour.," p. 1073, vol. i, 1889, "New York Med. Rec.," p. 449, vol. xxxv, and "Annals of Surgery," p. 138, vol. ii, 1889; Weir, "Medical News," April 27, 1889.

VERRUCA.

Synopsis.—(Vol. 1889, p. 506.) Continued doses of **Sulphate of Magnesia**, gr. j to iij for children, ʒss t.d. for adults. *Locally:* **Salicylic Acid Paste**, followed by a saturated solution of **Chromic Acid**. Unna's preparation containing x grs. **Arsenic**, and v grs. **Corrosive Sublimate** to the ℥j, applied on gauze and kept on night and day.

VITREOUS (Opacities in the). *W. Lang, F.R.C.S.*

Bull has operated on seventeen cases of opacities of the vitreous, where the obstructive membrane appeared to be the chief cause of the diminished sight. He divided the membrane with a cutting needle, using antiseptic precautions; in fourteen cases the improvement was marked, and in none was the eye lost. This plan of treatment appears to prevent detachment of the retina—an otherwise common occurrence in this class of cases.

VOMITING of Pregnancy. (See also "Obstetrics.")

Synopsis.—(Vol. 1888, p. 486.) ℞ Solution of Potash, ♏xv, with Tinct. Opii, ♏iv, every four hours; in simple bilious vomiting, **Ingluvin**, gr. x, also in pregnancy and cauterize cervix with **Nitrate of Silver**. *In Gastric Ulcer:* **Ferri Tart.**, gr. x, as tonic; **Succus Conii**, ʒss to ʒj, as sedative; **Glycerine Enemata.** *Sea-Sickness:* **Cocaine Lozenges.**

(Vol. 1889, p. 507.) **Paraldehyde**, gtt. xl, **Simple Elixir**, ʒj, M. A teaspoonful given in water and repeated in half an hour if necessary, useful in vomiting from ovarian irritability, pregnancy, and the nausea of migraine. **Oxalate of Cerium**, grs. j to iij in functional sickness and sometimes in sea sickness. **Tinct. Iodi**, gtt. v in sweetened water for vomiting during and after labour (p. 49).

WARTS. (See "Verruca.")

WHOOPING COUGH. *Frank J. Wethered, M.D.*

Treatment by Antipyrin.—Dr. Dubousquet-Laborderie at a recent meeting of the Societé de Thérapeutique, read an in-

teresting paper on the treatment of whooping cough by **Antipyrin.**

The author has employed this treatment for two years, and of a total of ninety-four cases treated in this manner, seventy-one have been materially benefited, particularly in twenty-one cases in which there had been as many as thirty to forty-five attacks in the twenty-four hours.

The dose varied from 30 centigrammes to 1 gramme for children up to three years of age, and from 2 to 4 grammes in older children and adults. The author has never observed any affection of the urinary passages upon this treatment, which is well supported by the patients.

Sonnenberger also recommends **Antipyrin** in whooping cough. The writer, after reviewing the various methods of treating whooping cough hitherto followed, concludes that local treatment has never shown any very brilliant results on account of the difficulties attending its application, and therefore gives his adherence to internal medication. His favourite remedy is antipyrin, which has been used by him in about seventy cases. The dose ranged from ·01 gramme in children to 1 gramme in adults, administered thrice daily. The best results were got when the drug was begun early in the disease and combined with favourable surroundings. In those cases in which it was given from the beginning of the disease, the course was a very mild one, running from three to five weeks, the number of paroxysms being six or seven daily. In the later stages it seemed to diminish the violence of the paroxysms very quickly, and their frequency after a few days. It is to be noted that the hygienic surroundings of the patient were made the best possible that circumstances would allow.

Abortive treatment of Whooping Cough by Fumigation.—Mohn, of Christiania, claims that whooping cough may be aborted by disinfection of the room by **Burning Sulphur.** The patient is moved out, bathed and dressed in fresh clothes, and the room and all its contents, clothes of patient, etc., fumigated by sulphur for the space of six hours. After proper ventilation the patient is moved back, and lo! the whooping cough is cured in an altogether miraculous fashion.

Mr. F. E. Manby states that while he cannot advance such evidence of immediate cure as has been recorded by Dr. Mohn, he regards the **Sulphurous Acid** treatment as decidedly beneficial. Cough is lessened in frequency, expectoration of the thick clogging mucus much facilitated, paroxysms lessened in violence, and sickness after them as a consequence scarcely known. The children pick up quickly, and in no case has the cough lasted in its form of reduced violence more than

a fortnight after the treatment has commenced; it gradually, but surely, abates and ceases.

Treatment with Chinine, and especially with subcutaneous injections.—Unjar and Fervers have treated whooping cough with **Chinine** with good results. In cases in which the drug is constantly vomited, they used subcutaneous injections of **Chinine-Carbylamide.**

REFERENCES.—Dubousquet-Laborderie, "Jour. of Laryng. and Rhino.," July, 1889; Sonnenberger, "Cent. für Kinderh.," Oct., 1887; Mohn, "Amer. Jour.," Oct., 1888; Manby, "Practitioner," Aug., 1888; Unjar and Fervers, "Wien. Med. Blätt.," No. 31, 1888.

WORMS.

Synopsis.—(Vol. 1888, p. 487.) **Thymol**, ʒij, divided into twelve doses, one to be taken every quarter-of-an-hour, ʒss **Ol. Ricini** being taken the previous evening, fasting, and another dose after the Thymol.

(Vol. 1889, p. 518.) **Santonin** for round worms the least soluble salts being best; **Turpentine**, ♏v to x t.d. in mucilage; **Chenopodium Oil.** To clear out thread worms give one or two good doses of **Rochelle Salts**, followed by enemata of ice-water, lime-water, or infusion of **Quassia.** To remove tape worm first give a dose of **Castor Oil**, then feed for a day on onions, garlic and salt herring to nauseate the worm, next use **Oil of Male Fern. Delphinium Staphisagria Seeds** (p. 37). **Embelia Ribes Fruit** in powder, ʒj to iv for tæniæ (p. 38). **Santoninoxime**, gr. j for a child, gr. iv for adult in ascarides (p. 64).

WOUNDS. (See "Injuries," &c.)

Synopsis.—(Vol. 1889, p. 63.) **Quebracho Fl, Ext.** painted on, forms a useful coating.

WRY NECK. (See "Torticollis.")

Synopsis.—(Vol. 1889, p. 519.) **Solanin**, grs. j to ij, gave good results in one case.

XANTHELASMA. *W. Lang, F.R.C.S.*

Stern has succeeded in removing patches of xanthelasma from the lids near the inner canthus without leaving any pigmentation of the resulting scar. He applied a layer of **Collodion** containing 10 per cent. of sublimate, which caused a superficial eschar; as soon as this separated, healing took place without any contraction of the scar.

Wende has treated the same condition with the galvano-cautery.

XANTHOMA.

Synopsis.—(Vol. 1889, p. 520.) **Phosphorus** administered internally, followed by **Turpentine** or **Ac. Nitro-Muriatic** given first and followed by **Arsenic**; but removal by the knife is probably best.

YELLOW FEVER.

Synopsis.—(Vol. 1889, p. 520.) ℞ Sod. Bicarb., grammes x, Hyd. Chlor. Corrosiv., centigrammes ij, Aq. Pur. Litre j, M. Sig. grammes l every hour given ice cold to check proliferation of germs. **Benzoate of Sodium** may be added to the formula for its laxative action, and in severe cases the amount of bichloride may be increased to v centigrammes per litre.

[*Received too late for Alphabetical Insertion.*]

THE EPIDEMIC INFLUENZA (*Fr. Grippe*).—In the limited space at our disposal we cannot hope to do justice to the chief medical topic of the day. From the reports of cases already published by various observers, and from our experience of many cases seen by us in Switzerland during the month of December, 1889, and in Bristol the following January, we see no reason to suppose that the present epidemic disease differs from the epidemic catarrh of 1847-48, which the late Dr. Thomas Peacock of St. Thomas' Hospital, London, has described. Clinically we may distinguish four distinct forms of this disease :—

(*A.*) *Simple Catarrhal Fever.*—The majority of cases in England belong to this class. The incubation period is generally two days. The onset is often sudden ; in many cases there is a prodromal feeling of *malaise* lasting for about forty-eight hours. The attack may be ushered in by syncope, or by a complete rigor, or in children by convulsions. Usual early symptoms are a feeling of tightness and constriction in the chest, disappearing with the onset of cough with expectoration of bronchial phlegm. *Râles* and rhonchi may be heard in auscultation. The simple form tends to be remittent in character, the symptoms usually abating in the day-time and increasing in severity towards evening. The spleen is generally enlarged. Great prostration attends the disease throughout its course, and lasts for days or weeks after convalescence. Influenza is seldom or never fatal *per se*, but patients die chiefly from pulmonary complications, and from cardiac failure. In rare cases a rash has been observed, urticaria, roseola, erythema ; herpes of the lip and eyelid have also been noted. In a case reported to us, a lad while doing his work fell fainting, and on recovering consciousness his temperature was found to be 102°, with a rash resembling that of scarlet-fever on his chest.

(*B.*) *The Nervous form*, characterized by the intensity of the cephalalgia and rachialgia. Perhaps these cases, beginning suddenly with an attack of syncope with very rapid rise of temperature to 102° or 103°, should be regarded as coming under this class, although cases with such an onset are often not attended with much pain.

(*C.*) *Pulmonary form*, in which the lungs are markedly affected. This complication is either : (1,) Capillary bronchitis, or (2,) Broncho-pneumonia. The sense of constriction in chest, dyspnœa and stiffness, and soreness in the throat, are much more intense than in the simple form. The pneumonia of influenza is generally combined with capillary bronchitis, upon which it supervenes. In some cases reported by M. Ferrand at the Societé Médicale des Hopitaux, the pneumonia

developed very rapidly, but cleared up in three days. Dr. Peacock in his records of the 1847 epidemic, informs his readers that those cases in which pneumonia was combined with bronchitis, were less fatal than those in which capillary bronchitis alone existed, and he also found that the pneumonia differed from ordinary pneumonia in undergoing resolution more rapidly.

(*D.*) *Gastro-intestinal form* begins with severe colicky pains, vomiting and diarrhœa. One of our cases began with an attack of urticaria, and closely resembled acute ptomaine poisoning. An urticarial rash has been observed in a few cases by others. In this form, and in the nervous form, the catarrhal symptoms are often altogether absent, or only come on late in the course of the illness.

Treatment.—In spite of the severity of the symptoms the disease does not appear to be particularly dangerous in itself, provided complications can be avoided, and our efforts in simple cases should be directed towards supporting the patient, and preventing the case assuming the graver types, and all lowering measures are to be avoided. **Quinine** has been largely used in doses of 15 to 20 grains for reducing the temperature. **Salicylate of Soda** is useful. **Salicine** has proved efficacious in the hands of Dr. Maclagan. Dujardin-Beaumetz has found **Aconite** useful in reducing temperature.

For the relief of headache **Antipyrin** is the favourite remedy, in doses of 1 to 3 or 4 grains. It is especially advocated in the nervous form. Dujardin-Beaumetz also reports favourably on **Exalgine** and **Phenacetin.** In pulmonary cases, which are the most dangerous, **Stimulant Expectorants** are required. The gastro-intestinal cases are best relieved by preparations of **Opium.** We have found tincture of **Gelsemium** in drop doses every hour useful in reducing the temperature and relieving the pains in simple cases. Dujardin-Beaumetz recommends tincture of **Aconite,** and **Cardiac Tonics,** such as **Digitalis. Strophanthus** or **Caffein cit.** are required in many cases.

References.—Peacock, "Quain's Dict. of Med.;" Beale, O'Connor, "Lancet," Dec. 21, 1889; Sisley, Besley Thorne, Gairdner, Manby and Rowell, "Lancet," Jan. 4, 1890; Richmond, Sisley, Lyon, Editorial art., "Lancet," Jan. 18, 1890; Squire, Maclagan, Mackenzie, "Lancet," Jan. 11, 1890; "Lancet," Dec. 7, and 28, 1889; Ferrand, "Prog. Méd.," Jan. 18, 1890; Dujardin-Beaumetz, "Bule, Gén. de Thérap.," Jan. 15, 1890; "Prog. Méd.," Dec. 4, 1889; "Brit. Med. Jour.," Jan. 25, 1890; Bouchard, "Prog. Méd.," Jan. 4, 1890; Casper, "Prog. Méd.," Jan. 11, 1890.

Part III.—MISCELLANEOUS.

Sanitary Science.

By D. S. DAVIES, M.B. Lond., D.P.H. Cantab.,
Medical Officer of Health for Bristol, etc., etc.

The growth of modern Hygiene in England may reasonably be connected with the successive impulses given to the study of disease causation and prevention by the cholera epidemics of 1832, 1849, and 1854. In 1837 civil registration was begun, and the Registrar General's first annual report of 1839 gave the first opportunity of accurately gauging the value and results of sanitary measures, not only in the case of occasional fatal epidemics, but also in the case of the commoner preventable diseases, of which enteric and typhus fevers alone are responsible, as Professor de Chaumont has estimated, during the fifty-four years from 1832 to 1885, for eight times the mortality of cholera, or for a total number of deaths amounting to 1,500,000.*

The first report of the Health of Towns Commission, in 1844, marked another step in sanitary progress, and the constitution of the General Board of Health, under the Public Health Act of 1848, originated an era of considerable local activity.

A large number of Acts bearing upon public health were passed between the years 1848 and 1872, the Public Health Act of which year divided the country into Urban and Rural Sanitary districts, and made compulsory the appointment, previously permissive, of medical officers of health and sanitary inspectors.

In 1871 Trinity College, Dublin, commenced granting a qualification in subjects relating to public health, an example followed in 1875 by the Universities of Edinburgh and Cambridge, and since then by eleven other medical licensing bodies. Three hundred and fourteen qualifications in these subjects have, up to the present, been granted. In 1886 a clause was inserted in the Medical Act of that year, by which these qualifications became registrable, and the 18th Section of the Local Government (England and Wales) Act of 1888 further provides that "No person shall, after the first day of January, 1892, be appointed the Medical Officer of Health of any County, or of any such District

* Inaugural Address to Sanitary Congress at Leicester, 1835.

or combination of Districts, as contained, according to the last published census for the time being, a population of 50,000 or more inhabitants, unless he is qualified as above mentioned, (*i.e.*, legally qualified for the practice of medicine, surgery, and midwifery), and also is registered in the *Medical Register* as the holder of a Diploma in Sanitary Science, Public Health, or State Medicine, under Sect. 21 of the Medical Act, 1886, or has been, during three consecutive years preceding the year 1892, a Medical Officer of a District, or combination of Districts, with a population according to the last published census of not less than 20,000, or has before the passing of this Act been, for not less than three years, a Medical Officer or Inspector of the Local Government Board."

It is thus evident that, of late years, not only has the study of public health become a separate branch of medicine, but also that due recognition of this has been obtained from the Universities and licensing bodies, and from the Medical Council, and the Legislature.

It also appears that the Medical Council contemplates sanctioning the registration only of such diplomas in public health as necessitate a course of special training, including a definite course of laboratory work, and also practical work under the direction of the Medical Officer of Health of a city or county.

Thus it is that, for many reasons, increasing attention is being paid by the medical profession to the study of public health, and the frequent enquiries in the Medical Journals as to the best text-books for the examinations in this subject, have suggested that a short list of some suitable books may be acceptable.

The limits of this article necessarily prevent a detailed treatment of any one subject, and matters only of very general interest have, in consequence, been touched upon.

HOUSE DRAINAGE.

Water Carriage System.—Mr. Baldwin Latham, in his "Sanitary Engineering," describes and figures a Pompeian water closet. In England they appear to have been generally used only since the end of the last century, when the valve closet, now in frequent use, was invented. All forms of closets may be classed under the heads of Closets with Valves, Closets with Traps, and Closets with Valves and Traps. The requirements of a good water closet are: (1,) That it shall be inodourous; (2,) Shall work efficiently with a minimum quantity of water; (3,) Shall be simple in construction, and not likely to get out of order.

It is obvious that a closet inside a house, if it fail to comply with all these requirements, may readily become a positive and dangerous

nuisance. The form of closet most frequently found is, in all its details of construction, the worst. This is known as *The Pan and Container Closet* (*Fig.* 53). *A* is a porcelain basin, the lower end of which dips into the metal *pan*, *B*, which holds a certain quantity of water. Upon pulling up the handle this *pan* is depressed into the position shown by the dotted lines, and discharges the water together with its contents, with considerable splashing, upon the sides of the *container*, *c*, the large size of which allows of the accumulation of much filth in its interior. From the *container* the mixed soil and water find their way through the pipe leading to the *trap*, *D*. This, called from its shape a D-trap, consists of a lead receptacle holding water, into which the discharge pipe from *c* dips, and the intention of it is to prevent, by means of this *water-seal*, the return of foul gases from the drain. As a *trap* with this object the D-trap serves fairly well, and it is little likely to become unsealed ; but it is easy to see that, by its construction, the free flow of water through it necessary for self-cleansing is impossible, and, as a fact, filth tends to accumulate around and behind the dip pipe, and there decomposes. In time, also, the lead soldered junctions become eaten away, and the trap soon becomes perforated with holes and worthless, except as a distributor of foul gases, which escape into the house.

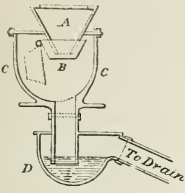


Fig. 53.

The Valve Closet (*Fig.* 54) consists (apart from the working fittings) of a deep earthenware basin, *A*, which is kept about two-thirds full of water by means of a cranked flap-valve, *V*, fitted to the outlet of the basin. Beneath this again is placed a *trap*, *T*, which is connected to the drain.

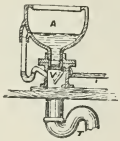


Fig. 54.

Traps.—The object of a trap is, as before explained, to prevent, by means of a water-seal, the return into the house of foul gases from the drain. The seal may be secured either (as in the D-trap) by allowing the discharge pipe to dip for a certain depth below the outlet level of the water in the trap, a plan which, as has been seen, interferes materially with the self-cleansing properties of the trap ; or secondly, by making a continuous S-shaped bend in the length of the pipe, in such fashion as to retain in the bend a certain quantity of water, into which the upper part of the bend dips and forms the seal. These traps are frequently known as *Syphons*, and they may be made in lead or earthenware. The more general forms in use are : (1,) The S-trap, so

called from its shape; (2,) The P-trap, with extra high arm, giving depth of water-seal and side-discharge.

Fig. 55.

Fig. 56.

Fig. 57.

Hellyer's Anti-D-Trap, made in cast-lead, gives a 1¾ inch depth of water-seal, and is not liable to become "unsyphoned" by the sudden discharge through it of a large body of water, as from a slop-pail, a defect to which many of these syphon traps are liable. This renders it a generally useful form of trap to place beneath closet basins.

The Wash-Down Closet.—This is the simplest form of fitting, and consists of a glazed earthenware basin, preferably white, connected to a syphon beneath, of the same material. The two points of importance in choosing these closets are: (1,) The shape of the pan, and (2,) The efficiency of the flush. The old-fashioned conical "Hopper" water closet (*Fig.* 58), long or short, with its miserably inefficient side-flush, should never be adopted. The narrow tapering shape of these pans inevitably results in fouling, while they are difficult to get at to clean, and the flush is generally quite useless.

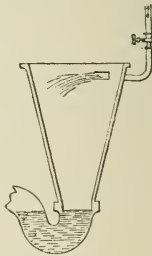


Fig. 58.

The proper shape for these closets is that shown in the sketch (*Fig.* 59,) with shallow basin, straight back to avoid soiling and well made rim-flush. This pan, fitted over a reliable trap, makes a simple, cheap and convenient closet, and most makers now keep this pattern, known as the Artisan, Hygienic, Wash-Down, Deluge, etc., in stock. It must be remembered, however, that where the flush is limited to two gallons, a full-sized delivery pipe

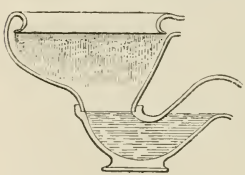


Fig. 59.

(1½ inch) is required, and the cistern must be sufficiently high to give a good head of water, so as to effectually remove all deposit and paper from the pan over the high arm of the syphon. Should the first flush fail to remove all the deposit, however, it may easily be repeated, and one point of vital importance is that any uncleansed deposit remains *in sight* where it may be dealt with, not, as in the pan closet, out of sight upon the sides of the container. This pattern pan is now made with the trap in one piece and upon a self-supporting pedestal. Placed thus upon a tiled floor, without any enclosing framework, with a small hinged rising seat, these closets appear to fulfil every requirement of cleanliness, simplicity and economy.

Wash-Out Closets.—This form of closet, which is constructed wholly of glazed earthenware, has a shallow basin, which receives the deposit. The flush washes the contents of the basin through the side opening, and so into the trap, which is placed beneath. These basins are made in one piece upon a self-supporting pedestal, so that they may be fitted up without enclosure. The flush does not act directly upon the water in the trap, and loses some of its force in passing over the basin, so that a considerable quantity of water is required to keep them clean and the trap clear. In a pattern of this closet made by Jennings, the flush, instead of being delivered from the rim, is directed horizontally from a series of holes just above the water level.

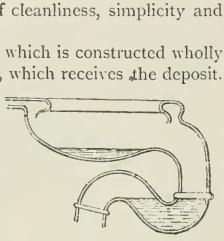


Fig. 60.

Soil Pipes.—The contents of the closet basin are washed through the *trap* into the *soil-pipe*, the name given to the descending pipe, made of lead or of cast-iron, through which the sewage is carried, from the closet, to the drain on the ground level. Formerly, the soil-pipe was almost always to be found within the house and frequently embedded in the walls, so that any defect could with difficulty be discovered or repaired. Wherever possible, the soil-pipe should be *outside* the house, and so situated that the discharge pipe from the closet trap may be directly connected into it through the wall. The usual diameter of a soil-pipe receiving one or two closets is 4 inches, and the pipe itself should be continued upwards in full diameter to a point above the roof, removed from windows and chimneys. This end may conveniently be capped with some form of exhaust cowl, or may be simply left open.

Disconnection of House Drain.—The soil-pipe is continued at its

foot into the house-drain ; and this drain, having previously collected the other wastes (from sink, bath and lavatory), discharges into the sewer.

At the point where the drain discharges into the sewer it is necessary that a proper *disconnection* be made, in order to prevent the passage of sewer gas into the house drain. This is best secured by the construction of a *disconnection chamber*, a section of which is given in *Fig.* 61.

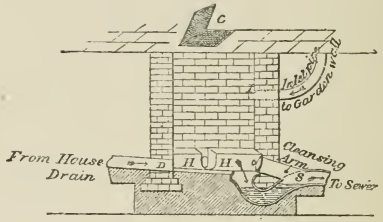


Fig. 61.

The house drain, *D*, discharges the sewage through the half pipe channel, *H H*, into the syphon, *S*, which cuts off the chamber from the sewer; *I* is an inlet pipe for fresh air, and is carried to the ground level or to a convenient place in the garden wall. An air-tight cover, *C*, permits of ready access, and the open channel gives facility for cleansing the house drain by means of a jointed rod, if necessary. The cleansing arm leading to the sewer is ordinarily kept closed by a cemented plug.

The ground plan of such a chamber shows how branch drains are connected, each one joining the main drain at an inclination in the direction of the flow.

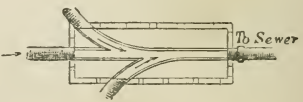


Fig. 62.

It is important that an efficient trap be used to disconnect from the sewer. The form shown in *Fig.* 11, with a central upright arm, is not a good one, as the central arm interferes with due flushing, tends to accumulate dirt, and is of little use for cleansing purposes In small houses a disconnection chamber is not

Fig. 63.

always used, but is replaced by a trap, such as Buchan's (*Fig.* 64), which allows of the arm being carried up to the ground level, for the admission of fresh air.

Fig. 64.

The disconnection or manhole chamber offers very great facility for inspection and cleansing of the drains, and its great usefulness more than compensates for the initial expense of its construction.

The diagram (*Fig.* 65) shows in what way our drainage scheme, so far as we have constructed it, works. It is seen from this that a current of air may freely pass through the inlet, *I*, across the disconnection chamber, thence entering the house drain and escaping by the open end of the soil pipe, *S P*. To the maintenance of this current the aspirating effect of the wind over the top of the soil pipe, assisted, it may be, by some form of exhaust cowl, contributes. The soil pipe and house drain are also seen to be trapped off from the sewer, and the house itself from the soil pipe. It is also to be particularly observed that no dependence is placed upon the resisting power of water-sealed traps against any pressure of gas which may arise in closed pipes. The traps are used in conjunction with free ventilation of the pipes, and it is only when thus used that they may be relied upon to exclude sewer gas from the house.

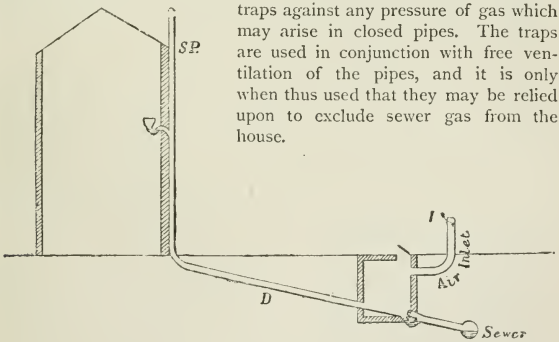


Fig. 65.

Sink, Bath, and Lavatory Wastes.—Mr. Eassie has pertinently said: "It may be taken as a safe and most general rule that nothing should enter a drain direct, a duly ventilated soil pipe alone excepted. Every other waste pipe should deliver in the open air, over or under a gully-grating."

The diagram (*Fig.* 66) shows a kitchen sink thus properly disconnected. Bath and lavatory wastes should be similarly treated. In each case the sink and the bath or lavatory basin should be trapped

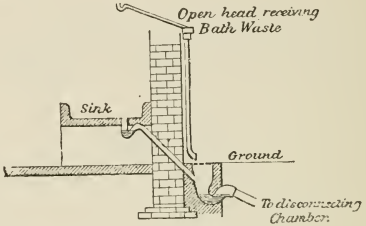


Fig. 66.

immediately beneath, in order to prevent the entrance of cold air, or the return of any smell from decomposing fat or soap.

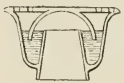


Fig. 67.

A *Bell Trap* (*Fig.* 67), is never to be employed; it is quite useless, and, as the top is removable, it is frequently left off, leaving the drain altogether untrapped.

MEMORANDA ON DRAINAGE.

No drain should, in any case where it can be avoided, pass under a house. If it cannot be avoided, special care must be taken, by the use of properly cemented joints, a properly prepared concrete bed, and a covering of concrete to the depth of at least six inches, or by other special means, to render it gas and water tight. Every such drain should be arranged so that it is freely ventilated from end to end, and wherever it passes beneath a wall a relieving arch should be turned over it to prevent fracture by settlement.

Except in special cases, where iron pipes may be required, every drain should be constructed of properly glazed, socketed, earthenware pipes, and all joints should be well jointed at every part of the circumference with cement. No *mason's* drain or stone drain, or unsocketed pipes, should be used to carry sewage; and wherever a trap is required, in no case must a *mason's* trap or freestone *dip-trap* or *eject* be used.

All flushes to water closets should be delivered from a waste-preventer or flushing box, and the closet supply must in no case be obtained directly, either from the water main or from the drinking cistern. All

cistern overflows should be made to discharge into the open air, and in no case into any drain or soil pipe.

If the ventilated soil pipe does not rise from the highest point of the drain, it is advisable to carry up another full-sized pipe from this dead-end of the drain. The interior of all iron pipes is subject to rust-scaling, unless properly coated ; and long upright lengths of iron pipe, with sharp bends at the bottom, are frequently found choked when used in places where no water flush is passing through. It is therefore advisable to use pipes coated with Angus Smith's or similar preparation, or to furnish the bend with a catch arm and inspecting cap at the lower end.

Whenever a drain has to pass round a corner, it is very advisable to provide a small inspection chamber, with half-pipes round the bend and an iron removable cover to facilitate inspection.

When one drain discharges into another, it must do so at an angle in the direction of the flow, and not at a right angle. All such junctions should be made into proper junction arms, and smaller pipes must always discharge into larger ones, as 4-inch into 6-inch.

Pipes with junction arms may now be obtained of all sizes from most makers, and there is no excuse whatever for a mason's joint, or for the connections sometimes made by chipping holes into the larger pipes, or for any other slovenly device.

When any change in the size of a straight length of drain is made this should always be done by means of a taper pipe.

It is generally better to use a somewhat smaller syphon in the disconnection chamber than the drain delivering into it : thus—a 6-inch, house drain will flush out more effectually a 4-inch than a 6-inch syphon.

There is no advantage in having either drains or syphons too large ; and a small amount of water will more readily cleanse a 4-inch or 6-inch pipe than one of larger diameter.

School Closets, Latrines for Asylums, etc.—For use in schools, etc., where the water carriage system is available, some form of trough closet is the best for adoption. In these closets the dejecta are received into water standing in a long trough, over which the seats are placed, and this water, with its contents, is discharged once or twice daily by an attendant, who raises the plug or valve by which the trough communicates with the drain ; or an automatic flushing tank

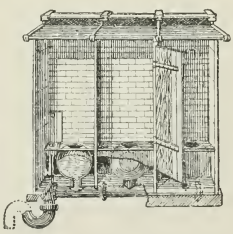


Fig. 68.

may be so arranged as to effect this cleansing at intervals. The form shown in the sketch is in many respects preferable to the open trough. (*Fig.* 68).

Dry systems of excrement disposal are dealt with at length in the text-books enumerated at the end of this article.

Sewers.—Eytelwein's formula for velocity of flow in circular sewers:

Where V = velocity per second in feet
V' = velocity per minute in feet
r = mean radius, or hydraulic mean depth

$$\left\{ H.M.D. = \frac{\text{sectional area}}{\text{wetted perimeter}} = \frac{A}{P} \right\}$$

s = sine of slope $\left\{ = \frac{\text{total fall}}{\text{length of sewer}} = \frac{h}{l} \right\}$

Then—

$$V = 93{\cdot}4 \sqrt{rs}$$

$$V = 55 \sqrt{2hr}$$

To obtain discharge in cubic feet multiply V by section area of current of fluid.

For egg-shaped sewers, flowing two-thirds full,

$$V = 15{\cdot}3 \sqrt{\frac{d \times h}{l}} = \text{velocity in feet per second.}$$

d being the greatest tranverse *diameter in inches.*

$$Q = 11{\cdot}56 \sqrt{\frac{a^5 \times h}{l}} = \text{discharge in cubic feet per second.}$$

VENTILATION.

We cannot demand that the air of rooms shall be absolutely as pure as the open air, for Prof. de Chaumont has shown that taking the CO_2 in fresh air at ·4 per 1000 volumes, and the excretory CO_2 of an average man at ·6 of a cubic foot per hour, a man placed in a room of 1000 cubic feet must receive practically an unlimited supply, about a million cubic feet per hour, to reduce the CO_2 to the standard of fresh air. This supply would necessitate the changing of the whole air in the room once in every 3½ seconds, producing intolerable draught; the question of draught, indeed, forms the most difficult problem in the ventilation of small spaces.

Without attempting too much, however, we may fairly assume that the air supply to inhabited spaces should be sufficient to remove all sensible impurity or closeness, and upon this basis Drs. Parkes and de Chaumont have determined that ·2 respiratory CO_2 per 1,000 parts,

in addition to the ·4 parts found in the open air, is the *permissible limit* of CO_2 as indicating respiratory impurities.

The volume of pure air requisite per hour per head to maintain a certain standard of purity in an inhabited room is determined by the formula :—

Where e = CO_2 evolved by one man in one hour (·6 cubic feet)
ρ = amount of respiratory impurity permitted in one cubic foot of air (·0002 per cubic foot)
d = delivery in *cubic feet* of air per *hour* to maintain standard of purity.

$$d = \frac{e}{\rho}$$

$$= \frac{\cdot 6}{\cdot 0002} = 3000 \text{ cubic feet per head per hour.}$$

Cubic Space.—The minimum size of air space for an average adult male depends upon the rate at which the requisite amount of air can be taken through the space without causing perceptible draught ; and the frequency of renewal of air, which involves draught, increases directly with the diminishing of the cubic space.

Thus, if 3000 cubic feet of air are to be supplied per hour, a space of 300 cubic feet must have its air renewed ten times an hour, while a space of 1000 cubic feet need only have it changed three times an hour to secure equally good ventilation. A change of air three or four times an hour is found in this climate to be as much as can be borne without discomfort ; this requires, in order to maintain the standard of purity, an initial air space of 750 to 1000 cubic feet.

The following examples show how frequently—chiefly on account of the question of cost—much smaller cubic spaces have to be allowed by certain laws and regulations :—

CUBIC SPACE PER HEAD.

Common Lodging Houses...	240 to 300 cubic feet.
Barracks	600 ,,
London Med. Officers of Health.	
Rooms used by day and night	350 ,,
Rooms used by day or by night only ...	300 ,,

It must be remembered, however, that the securing of 300 cubic feet in common lodging houses is a great advance upon the pre-regulation period, and has already given very good results.

For Army Hospital wards 1200 cubic feet are required, and in the case of hospitals generally, 1000 or 1300 cubic feet are necessary, and for Infectious Hospital wards as much as 2000 cubic feet per bed is advisable.

Principles of Ventilation.—As local differences in temperature cause winds in the open, so difference in temperature between the warm air

of houses and the colder outer air causes a continual movement of air through the house, by which ventilation is secured, the warmer and lighter air escaping by means of the chimney or other opening, while cold air rushes in to supply its place. It is curious that even now so many houses are built without definite inlets at the lower part of the rooms to admit cold fresh, and outlets at the upper part of the room to let escape vitiated warm, air; but the chimney, although misplaced for this purpose, acts as a fairly efficient extracting shaft, and when windows are shut, cold air rushes in through imperfectly fitting doors and windows, so that the deficiency is supplied.

The movements of air due to difference of temperature follow defined laws :—

The velocity of the flow of fluids through an opening equals the velocity a body would acquire in falling through a space equal to the difference in height between the columns of fluid on either side of the opening. The difference in height represents the difference in pressure on the two sides of the opening; and in the case of air, which expands $\frac{1}{490}$th part of its volume for each degree Fahr. (·002036 = coefficient of expansion), the difference in pressure is represented by the difference between the external and internal temperatures multiplied by this coefficient.

The velocity per second of falling bodies, under the influence of gravity, is equal to eight times the square root of the height (nearly).

Thus, where v = velocity
t = internal temperature in degrees Fahr.
t' = external ,, ,, ,,
H = height in feet of warm column of air
a = coefficient of expansion (·002036)

$$v = 8\sqrt{Ha(t-t')}.$$

For example, let the chimney be 20 feet in height, the external air 40° F., and the heated air 70° F.—

$$v = 8\sqrt{20\times 30\times \cdot 002036} = 9\cdot 20 \text{ velocity in feet per second.}$$

This velocity, multiplied into the area in square feet of the opening, will give the delivery of air in cubic feet through the chimney; and the formula is similarly applicable to the delivery of air into rooms through any shaft in cases where the motion of the air is due to difference in temperature. Friction causes diminution of velocity in direct proportion to length of tube, and inversely as its diameter; in the case of angles, the loss by friction is in the proportion of $\frac{1}{1+\sin.^2\theta}$, where θ is the angle in the tube.

Practical Ventilation.—The most effectual ventilation is secured by the free passage of air through opposite windows, or through open doors and windows. But in a variable climate, doors and windows frequently have to be closed, and other means for admitting and extracting the air must be relied on. In most rooms the chimney forms a valuable extracting shaft (and no room without a chimney should, under any circumstances, be lived or slept in, unless special ventilating arrangements exist), but the inlet of air is generally left to chance.

Special Inlets may be made from the outer air, directly through the wall, the air current being directed upwards to avoid draught, by the shape of the valve, as in Sherringham's Ventilator (*Fig.* 69). These inlets are usually placed near the ceiling.

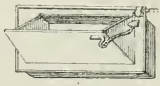


Fig. 69.

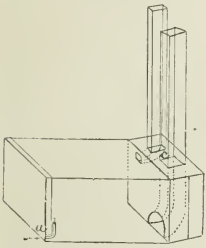


Fig. 70.

When it is desired to admit air from below, the current is usually directed upwards by a tube (Tobin's Tube) shown at *Fig.* 18 *(a)*, opening into the room at its upper end, at a height of six or eight feet, so as to avoid draught, and communicating below with the outer air.

In Harding's Ventilator (*Fig.* 71) the outside air enters through a grating at a height of seven or eight feet, and is made to pass through a series of small tubes fixed at an angle of about 30° with the wall. The current of air is thus broken up and diffused, and draught prevented.

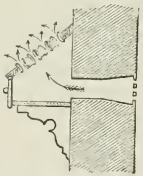


Fig. 71.

Other inlets consist of louvres, in walls or windows, and the familiar plan of inserting a small board beneath the lower sash of the window, so as to prevent it quite closing, and thus securing a constant in-coming up-current between the upper and lower sash, deserves mention.

Fig. 72.

In addition to the chimney outlet, it is well to have special outlets for warm and foul air near the top of the room, especially where much gas is burnt. In houses already built much difficulty is experienced in securing

such outlet, and Dr. Arnott's plan of placing a well-balanced metallic valve (*Fig.* 72), communicating with the chimney, in the chimney breast near the ceiling, is frequently adopted. This valve is so constructed as to close instantly with a down draught, and in some cases works well, but in others appears to interfere with the draught of the chimney.

A good plan, which Mr. R. Scott Burn suggests should be adopted in all new houses, is to carry up a ventilating flue from the top of the room, distinct from, but close alongside of the chimney, by which it becomes warmed and so forms an effectual ventilating shaft (See *Fig.* 70). Glazed pipes form the best shafts for this purpose, as, indeed, they do for chimneys generally, as they offer less resistance to air and fewer inequalities of surface for lodgment of soot.

Whenever gas is burnt, it should, if possible, be arranged so that the products of combustion do not mingle with the air of the room, but are carried away by special shafts. With the ventilating forms of the Wenham and other regenerative pattern burners (*Fig.* 73), the central ceiling light acts as a most useful extracting ventilator.

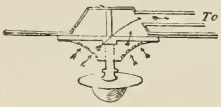


Fig. 73.

When, however, for reasons of convenience, this is not possible, the most economical form of burner is the Welsbach *Incandescent Gas Burner*, in which the light is obtained from an incandescent mantle, heated by a Bunsen flame. The illuminating power is high for the gas consumed, which is small; and the light is very white and steady The injurious products of combustion given off are also much smaller than with the ordinary burners, which are in every way wasteful and costly.

The special devices for ventilation, such as fans, water spray ventilators, etc., and for the introduction of warmed air, must be studied in the special treatises.

WATER SUPPLY.

The purity of the water supply, particularly as regards its freedom from all risk of human excremental contamination, is of the first importance to every community.

The water of all wells and springs is derived from rainfall, which percolates through the permeable strata until it is arrested by some bed of clay or other impermeable stratum. The water then accumulates in the permeable strata, and renders these waterlogged up to a certain line, which is governed by the lowest point of natural escape. (Rogers

Field, "Our Homes," chap. lxxx., *q.v.*). This underground water escapes slowly from its retaining soil into rivers or streams, or as a spring. Beneath the ground, then, is to be found a lake-like reservoir of water slowly moving to its natural outlets, and it is this reservoir that is tapped when a well is sunk into permeable soil.

Prof. Prestwich has discussed the question of subsoil water from a geological point of view, and gives the following instructive illustration:

"Let us take a section of any permeable stratum, such as *a*, (*Fig.* 74) underlaid by another, *b*, which is impermeable. As before mentioned, a certain portion of the rain which falls on the surface sinks down through *a*, until stopped by *b*, where it stands and rises to a certain level, *l*.

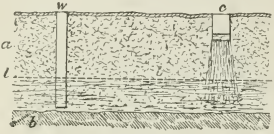


Fig. 74.

"Any shaft, such for example as *w*, sunk in *a*, to below the water-level, *l*, will, when it passes into the water-charged portion of the gravel or sand, *a*, have the water in the gravel or sand flow into it, until it reaches the level, *l*; and as quickly as the water is removed or pumped out of *w*, it is replenished from the surrounding store in the gravel, *a*, the height of the water in *w* being maintained consequently at that of the line *l*. If, on the other hand, another shorter shaft or pit be sunk at *c* to any point higher than the level, *l*, no water will rise into that shaft, and it will remain always dry. On the contrary, if water or any liquid refuse be poured into *c*, which is constructed of bricks without mortar, so as to allow of free drainage into the surrounding gravel, it will pass down, like the rainfall, to the main body of water or spring at and below *l*.

"This property of permeable strata has for ages been taken advantage of for the double purpose of obtaining a ready water supply and a ready house drainage; and it is a disgrace to the civilisation of the nineteenth century that a practice, begun long ago in ignorance and amongst a scanty population, should have been allowed to continue unchanged, and in its primitive rudeness, with all our knowledge and experience, and amongst our teeming population."

Fig. 75.

Prof. Prestwich then gives a section of the village of New Hincksey, near Oxford, as it existed in 1876 (*Fig.* 75), which forms a striking illustra-

tion of the way in which cess-pools and wells are intermixed in very many villages and towns at the present day, without any consideration whatever of the inevitable result.

The illustration shows long and short vertical shafts, the long shafts reaching to the underground water are the wells, the short ones are the cess-pools. Very probably the sewage, in its slow percolation through the gravel, becomes so filtered and aërated before it reaches the underground water, and is then mixed with such a large volume of this water, that the supply from the wells is clear and sparkling, but it is none the less dangerous. The existence of such conditions in towns and villages is frequently emphasized by a widespread outbreak of enteric fever, and yet it is notoriously difficult to induce Local Authorities to provide a water supply from pure sources, in place of wells drawing subsoil water from the neighbourhood of cess-pools.

Expense is, of course, the initial obstacle, and on this point Mr. Bailey Denton, having presupposed the selection of an unpolluted source, remarks: "If we apply the system of storing water for the supply of villages in summer, we may test the question in its monetary aspect by assuming the average population of rural villages to be four hundred. If each inhabitant requires ten gallons of water per diem (a quantity sufficient in places where water closets and factories are absent), it will require a supply of 480,000 gallons for the summer. This quantity is taken on the assumption that for 120 days, or four months in the year, there will not be a supply from ordinary sources. Allowing fifty per cent. for loss by evaporation, a storage reservoir to hold 720,000 gallons will be required. The reservoirs necessary to hold 720,000 gallons, would be rather more than $\frac{4}{10}$ths of an acre, if the depth were taken at 7½ feet." The expense of making an open pond of this size (as a covered reservoir would be too expensive), Mr. Bailey Denton has estimated as follows:—

	£	s.	d.
Excavation and embankment, 2500 yards, @ 6d. ...	62	10	0
Puddling bottom and slopes, dressing bank and gravelling bottom 6 inches deep on the puddling, and constructing overflow from reservoir	102	10	0
Planting and fencing	30	0	0
Value of land, ¾ acre	45	0	0
Total cost of reservoir	240	0	0
Iron pipes from reservoir, with stopcock, well, and brickwork	155	0	0
Four standpipes and taps	20	0	0
Total outlay...	415	0	0

USEFUL MEMORANDA.—(Spon's Engineers' Tables.)

Water.

1 gallon = 10 pounds.
1 cubic foot = 62·3210 pounds.
1 cubic foot = 6·2321 gallons, or roughly, $6\frac{1}{4}$ gallons.

Delivery of water through pipes.

d = diameter in *inches*.
G = supply in *gallons* per *minute*.
H = total head above point of discharge in *feet*.

(Or fall in a given length, L.)

L = length in feet (or distance from source to delivery).

(1,) $G = 28\sqrt{\frac{d^5 \times F}{L}}$ = supply in gallons per minute.

(2,) $H = \frac{G^2 \times L}{784 d^5}$ = head in feet to overcome friction.

Ex. Calculate the diameter of a pipe necessary to convey water to a town of 2,000 inhabitants, from a reservoir five miles (26,400 feet) distant, with a head of water of 50 feet. (Cambridge, 1887.)

Allowing 30 gallons per head, 60,000 gallons are required per twenty-four hours, or 42 gallons per minute.

From formula (2) $d^5 = \frac{G^2 \times L}{784 H} = \frac{1764 \times 26400}{784 \times 50} = 1188$

$\therefore\ d = \sqrt[5]{1188}$

The fifth root may be found by logarithms (divide log. 1188 by 5 and reconvert); fifth roots are also given in Molesworth's and other engineering tables.

d = 4 inches (about) = diameter of pipe required.

DISINFECTION.

Dr. Parsons has recently defined disinfection as "the destruction of infection—the destroying of the activity of that matter which, produced by a sick person and received into the system of a healthy one, has the power of causing in the latter a disease similar to that from which the former was suffering. In popular language the word 'disinfection' is used to include the use of 'deodorants' which destroy offensive odours, and 'antiseptics,' which prevent or retard putrefaction." But in considering the question in relation to disease, it is better to use the word in its strict etymological sense.

There is reason to believe that this infective matter is in all cases living matter, consisting of microscopic vegetable organisms. Certain of these are spore-bearing, and these spores are most resistant to the

destructive action of disinfectants. The spores of the bacillus of anthrax, the known cause of anthrax in cattle, and of malignant pustule in man, are amongst the most difficult of any to kill, and form therefore an excellent test; as what will indubitably destroy these, will *a fortiori* the more certainly kill the less resistant germs of the commoner human infectious diseases, of which probably small-pox alone is spore bearing.

Koch and Parsons accept, as the test of a true "disinfectant," that it shall have the power of *destroying* the most resistant micro-organisms *and their spores*; and in the experiments of Koch, Parsons, and Klein this destruction has been determined by the entire failure of subsequent attempts at *cultivation*.

The most convenient division of the subject is into three heads: (*a*,) Disinfection by heat; (*b*,) Disinfection by chemicals in solution; (*c*,) Disinfection by chemicals in the form of vapour.

(*a*,) *Disinfection by Heat.* (Dry heat or steam.)—*Applicable* more especially to all articles that cannot be boiled in water, *e.g.*, bedding, blankets, carpets, and cloth clothes generally.

Relative Disinfecting Power of Steam and Dry Heat.—Time required to ensure complete destruction, as proved by failure of subsequent cultivation experiments, of the spores of the bacillus of anthrax.

(*a*,) Dry heat	at 220° Fahr.	4 hours.
	at 245° Fahr.	1 hour.
(*b*,) Steam or boiling water at 212° Fahr.		5 minutes.

Steam is therefore the most expeditious and reliable, and is free from the danger of scorching, but leather is immediately spoilt by it. A thorough boiling of linen goods renders further disinfection unnecessary.

Forms of heat-disinfecting machines.—To ensure efficiency in a heat disinfector it is necessary: That the temperature of the interior shall be equally distributed, shall be maintained constant during the whole process, and shall be accurately indicated by some heat guage, so as to avoid possibility of either scorching or of ineffectual disinfection.

Of the dry air machines, those heated directly from below show most unequal distribution of temperature, while those heated by warm air currents—as the self-regulating Nottingham stove—are much superior; but all forms of dry heat apparatus are inferior to the steam machines in securing the required penetration of heat into badly conducting articles, such as thick mattresses. Steam apparatus combine the requisite qualities of equal distribution, rapid penetration (aided by employing the steam under pressure), and accurate registration of heat, which is shown on the steam pressure gauge.

The Washington Lyons steam disinfector is a good pattern and convenient to work. A steam jacket surrounds the chamber and so superheats and dries the contained steam. The most recent improvement in these machines is that introduced by Messrs. Goddard, Massey, and Warner, of Nottingham. This improvement consists in the use of an "exhauster" arranged to cause a current of either steam or air to pass continuously through the chamber. One chief advantage of this arrangement is that, by passing the warmed air current through the chamber when the disinfection is just completed, and before the doors are opened, we escape the slight condensation of watery vapour upon the clothes, which occurs when an ordinary steam chamber is opened, and the articles are taken out quite dry. For the purposes of large cities one or other form of steam apparatus is indispensable on account of the rapidity of action. For the less pressing work of smaller districts, one of the reliable forms of self-regulating dry-air machines will do very good service.

(*b*,) *Disinfection by Chemicals in Solution.—Applicable* in all cases where infectious excretions or discharges are to be dealt with. In such cases it is particularly necessary that all discharges should be *at once* received into, well mixed with, and covered by, chemicals of sufficient strength. An equal bulk of **Mercuric Chloride*** solution (1 in 1,000) is probably the most suitable. The following directions are given by the Medical Officer of the Local Government Board in a Memorandum, dated April, 1888 :—

"For the purposes of the sick room, such as the reception of soiled handkerchiefs, sheets, and the like, as well as for the swabbing of floors, a valuable disinfecting solution may be made with **Perchloride of Mercury**. It is well to have this solution slightly acid, coloured also in such a way that it shall not readily be confused with drinks or medicines ; and proper caution should be given to avoid accidents in its use. A solution, fitted for the desired purposes, may be made with ½ oz. **Corrosive Sublimate,** 1 fluid oz. **Hydrochloric Acid**, and 5 grains of **Commercial Aniline Blue**, in three gallons (a bucketful) of common water. It ought not to cost more than 3d. the bucketful and should not be further diluted. The use of non-metallic vessels (wooden or earthenware house tubs or buckets) should be enjoined on those who use it, and articles that have been soaked in it should be set to soak in common water for some hours before they go to the wash."

The comparative disinfecting power of certain Chemicals has been determined, as in the case of heat, by Koch and others.

* The "St. Bede Disinfectant" and "Kingzett's Bactericide" depend upon this chemical for their disinfectant properties.

Chemical.	Strength of Solution.	Action on Anthrax Spores.	Action on other Organisms.	Remarks.
Mercuric Chloride (Corrosive Sublimate) ...	1 in 5,000	Destroyed in 10 minutes	... ...	forms inert ppes with albuminous liquids, or in presence of sulphides, hence use acid, and in strength of 1 in 1000.
Carbolic Acid	1 in 20	Destroyed in 24 hours		*Carbolic Oil*, 5 per cent., had no effect on anthrax *spores* in 3 months, and the sensitive *bacilli* were no more affected by this than by pure oil. The same holds good as to thymol and salicylic acid.
	1 in 34	Destroyed in 7 days		
	1 in 100	... ...	Destroyed *bacilli* of Anthrax	
	1 in 1,000	... ...	Prevented growth of *bacilli*	
Thymol	1 in 80,000	Prevented growth		
Zinc Chloride	1 in 20 ...	No effect at end of a month		
	1 in 100	... ...	Retarded growth of micrococcus prodigiosus in 16 hrs, but failed to destroy in 48 hours	
Ferrous Sulphate ...	1 in 20	No effect in 6 days	Very little effect in preventing ordinary putrefaction	
Chloride of Lime ...	1 in 20	Retarded development in 1 day, destroyed in 5 days		
Potassic Permanganate	1 in 20	Destroyed in 1 day		
	1 in 100	No effect in 2 days		

This table shows the necessity for using the ordinary disinfectants in full strength. As has already been suggested, the contagia of the common human infectious diseases are possibly much more easily destroyed than the *spores* of anthrax, and in this way success with ordinary disinfectants is explained. *Creolin*, a disinfectant prepared by the Jeyes' Sanitary Compounds Company, has recently been experimented upon by Dr. Eisenberg and others in Germany, and appears to be a reliable disinfectant, with the advantage of being non-poisonous.

The inertness of Carbolic and Thymol Oils is remarkable, but does not contra-indicate their use as a local application in the desquamative stages of eruptive fevers to prevent contamination of the air by infectious particles. As the action is probably mechanical, inunction with **Vaseline** would perhaps suffice, but the addition of **Thymol** or **Carbolic,** or **Camphor,** may possibly be more grateful to the patient.

Chemical Disinfectants in the Form of Vapour.—Applicable to the disinfection of empty room spaces, the rooms, after fumigation, to be thoroughly scrubbed out and ventilated, and the walls and ceiling cleansed ; and, if necessary, re-papered or lime-washed.

Sulphurous Acid Gas and Chlorine Gas : Experimental Results.—Sulphurous acid gas failed to affect dry anthrax spores even in much excess, though well soaked spores were destroyed ; and, in the absence of moisture in ordinary rooms, the effect upon comparatively sensitive micro-organisms was *nil.* Anthrax bacilli exposed directly to action of the gas were destroyed, but the spores, placed in crevices or in pockets of garments, were untouched after twenty-four hours. With **Chlorine,** when the air was saturated with moisture, the results were more successful, but not in dry air.

Fumigation appears to be quite unreliable for the disinfection of infected articles of clothing or bedding.

For the disinfection of dead bodies, the coffin should be freely lined with chloride of lime or carbolic powder, and speedy burial should in all cases be secured.

STATISTICS.

Estimates of Population.—In order to calculate the published birth and death rates, which are given in annual rates per thousand living, it is necessary that an estimate of the population of the district under consideration should be made for the intercensal years.

The *Registrar General's method* is based on the assumption that the same *rate of increase* will obtain as in the previous intercensal period. The *rate of increase* is most conveniently calculated by the aid of logarithms. Suppose the estimated population for the middle of 1889 (mean annual population) is required. The difference between the

logarithm of the 1881 census population and the logarithm of the 1871 census gives us the logarithm of the rate of increase of population for ten years, and a tenth of this gives the logarithm of the annual rate of increase. The addition of eight and a quarter times the logarithm of the annual rate of increase to the logarithm of the enumerated (census) population in 1881 gives us the logarithm of the estimated population for the middle of the year 1889; the number corresponding to this logarithm is the estimated population. The addition of the quarter is necessary, as the census is taken in April, and the estimated population is required for the middle of the year.

Birth and Death Rates.—The death rates published each week by the Registrar General are annual rates per 1000 of the mean population of the year, *i.e.*, they represent the number who would die per thousand of the population, supposing the same proportion of deaths to population held good throughout the year.

In order to obtain the rate, the number of deaths occurring during the week is multiplied by 52·17747, the exact number of weeks in the year. This gives the annual number of deaths at the same rate, in the mean annual population, and from this the rate per 1000 is easily calculated. Thus, where P = mean annual population, and n = number of deaths in the week,

$$\text{Rate per 1000 per annum} = \frac{n \times 52{\cdot}17747 \times 1000}{P}$$

The same result is obviously obtained by dividing the total annual population by 52·17747 (number of weeks in a year). Thus we get what may be called a "weekly population," and in practice this is always used in calculating, as thereby is avoided the necessity for multiplying the deaths each week by 52·17747. Where W = the weekly population, and n = as before, the number of deaths in any week, the

$$\text{Rate per 1000 per annum for this week} = \frac{n \times 1000}{W}$$

Notification of Infectious Disease.—The Infectious Disease (Notification) Act, 1889 (52 and 53 Vict., ch. 72) received the Royal Assent on the 30th August. A Bill with this object was introduced into the House of Commons by Mr. Hastings, Dr. Farquharson, and others, in the Session of 1888, but only advanced as far as the second reading. The Local Government Board has, however, had this question in view for some time, and in 1887 issued circulars to the authorities of the forty-eight existing notification towns, asking for particulars and opinions as to the working of the several Acts, so that the passing of a general act at an early date has been looked upon as certain.

The Act of this year provides for due notification—first, by the head of the family to which the person suffering from an infectious disease belongs, or, in his default, by the nearest relative present or in attendance, by any person in charge of or in attendance on the patient, or by the occupier of the building in which the infectious patient is; secondly, by every medical practitioner attending on or called in to visit the patient, and the information is to be sent forthwith, on becoming aware that the patient is suffering from an infectious disease, to the medical officer of health for the district, under a penalty for neglect of forty shillings.

The Act applies to Scotland and Ireland, and extends (*a*,) to every London district after the expiration of two months from the passing of the Act, and (*b*,) to any urban, rural, or port sanitary district after the adoption thereof.

In this Act the expression "infectious disease to which this Act applies" means any of the following diseases:—Small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina or scarlet fever, and the fevers known by any of the following names: typhus, typhoid, enteric, relapsing, continued, or puerperal; and local authorities may, with the approval of the Local Government Board, include other infectious diseases than those specified in the Act. A fee of two shillings and sixpence is to be paid by the local authority to every medical practitioner for each certificate, if the case occurs in his private practice, and of one shilling if the case occurs in his practice as medical officer of any public body or institution.

The provisions of this Act apply to every ship, vessel, boat, tent, van, shed, or similar structure used for human habitation, in like manner as nearly as may be as if it were a building, with the usual exemptions in favour of Crown property, and in respect of ships, vessels, or boats belonging to any foreign government.

USEFUL BOOKS.

GENERAL.

PARKES' Hygiene. Edited by De Chaumont. Sixth Edition. The best English text-book. Churchill. 18/-

Hygiene and Public Health (Lewis's Practical Series). By Louis C. Parkes. A good students' text-book. 9/-

WILSON'S Handbook of Hygiene. Sixth Edition. A good introductory text-book. Churchill. 10/6.

WILLOUGHBY'S Hygiene. Designed for the Science and Art Department. Collins, London and Glasgow. 3/6.

Our Homes, and How to make them Healthy. Edited by Dr. Shirley Murphey. Contains very interesting and practical articles. Cassell and Co. 15/-.

SEWERAGE, DRAINAGE, ETC.

BALDWIN LATHAM'S Sanitary Engineering. An advanced text-book. E. & F. N. Spon. 30/-

The Plumber and Sanitary Houses, by Stevens Hellyer. A technical manual B. T. Batsford. 10/6.

CORFIELD'S Treatment and Utilization of Sewage. Macmillan. 16/-

BUCHAN'S Plumbing. Crosby, Lockwood & Co. 3/6.

Observations on the Construction of Healthy Dwellings, by Sir Douglas Galton. Macmillan. 10/6.

Annotated Bye-Laws of the Local Government Board, relating to Cleansing of Privies, Common Lodging Houses, Nuisances, New Streets and Buildings, and Slaughter Houses. Knight & Co. 8/6.

WATER ANALYSIS, ETC.

Water, Air, and Food, by Cornelius B. Fox, M.D. Churchill. 12/6.

VITAL STATISTICS.

NEWSHOLME'S Vital Statistics. 1889. Swan, Sonnenschein & Co. 7/6.

PUBLIC HEALTH ACTS, ETC.

HIME'S Practical Guide to the Public Health Act. A very useful and practical manual, with abstracts and memoranda of allied acts. Bailliére, Tindall & Cox. 5/-

SHAW'S Local Government Orders (Sanitary). Shaw & Co. 25/-

GENERAL PATHOLOGY, BACTERIOLOGY, ETC.

PAYNE'S General Pathology. Smith, Elder & Co. 12/6.

Bacteriology. Crookshank's manual. H. K. Lewis. 21/-

Micro-Organisms in Disease. New Sydenham Society.

Disinfection by Heat. Extract from Annual Report of Medical Officer of Local Government Board. Eyre & Spottiswoode.

A further list is to be found in the Cambridge University Examination Papers (Sanitary Science) for 1888. Cambridge University Press Warehouse, Ave Maria Lane, London. 1/-

Lunacy Acts Amendment Bill.

Epitome of clauses affecting the admission of private patients of the Lunacy Acts Amendment Bill (to come into operation on and after May 9, 1890).—Subject to certain exceptions mentioned further on, no private patient can be received into any asylum, hospital, or licensed house, or as a single patient, unless under an *order* of a judge of county court, or of a stipendiary magistrate, or of a justice of the peace, specially appointed and having respectively jurisdiction in the place where the lunatic is.

This *order* must be obtained by private application by *petition* accompanied by a *statement* and particulars, and by two *medical certificates* on separate sheets of paper.

The petition is in a definite form, and the statement is almost exactly the same as that which is now attached to the order sheet of all certificates for the reception of lunatics.

This petition shall be presented if possible by the husband, or wife, or by a relative of the alleged lunatic. If not so, the reasons must be given for any other person having signed the said petition. Nobody can sign the petition unless he is at least twenty-one years of age, and must have seen the alleged lunatic within fourteen days before the presentation of the petition.

The Medical Certificates.—One of the certificates shall, wherever practicable, be under the hand of the usual medical attendant of the alleged lunatic. The medical men must separately from each other examine the patient *not more than seven clear days before* presentation of the petition. A consultation, however, may take place between the two medical men signing before so doing.

Every certificate accompanying an urgency order shall contain a statement with reasons, that it is expedient for the welfare of the alleged lunatic or the public that he be at once placed under care. Every certificate under this act shall be evidence of the facts and opinions therein appearing, as if they had been verified on oath. Any incorrect or defective statement in an order or certificate discovered after reception, may be amended within fourteen days after such reception by the person signing the same, but not without the sanction of a commissioner and the consent of the judge, etc., who signed

the order. Any person who makes a wilful mis-statement in the medical or other certificates, or in any statement or report of bodily or mental condition under the lunacy acts or under this act, shall be guilty of a misdemeanour; but no prosecution for any wilful mis-statement shall take place except by order of the commissioners, or the attorney-general, or the director of public prosecutions.

Presentation and Petition.—If the judge, magistrate, or justice, after considering the petition, statement and medical certificates, is satisfied with the same, he may at once make out an *order* for admission of the alleged lunatic into the named hospital, asylum, or licensed house. If he is not satisfied, he may either forthwith visit the alleged lunatic, or appoint a time as early as possible, not being more than seven days after the said presentation and petition, for further consideration thereof; and he may make such enquiries as he may deem necessary. Notice of time and place appointed for further consideration of petition shall be sent by post in a registered letter to the petitioner.

The petition shall be considered private, and no one except the petitioner and the medical men signing the medical certificate shall without leave of the judge, magistrate, or justice, be present at the consideration of it.

At the time appointed for the consideration of the petition, the judge, etc., may make an order thereon, or dismiss it, or adjourn the case for any further period, not exceeding fourteen days, for further evidence. If the petition is dismissed, a statement of the reasons for so doing shall be delivered to the petitioner under the hand of the judge, etc. If after this another petition is presented as to the same alleged lunatic, the particulars of the former petition, so far as known, must be stated, and a copy of the statement of reasons for dismissal of former petition must be obtained from the commissioners, and presented with the petition. Anyone wilfully omitting to comply with this clause will be guilty of a misdemeanour.

The *reception order* given by a judge, magistrate, or justice, shall be sufficient authority for sending a lunatic to, and receiving and detaining him in, an asylum, hospital, or licensed house, in which he is to be received; but it shall not continue in force unless made use of before the expiration of seven clear days from its date.

In cases of Urgency.—An alleged lunatic may be placed under care upon an order signed (if possible) by the husband, wife, or by a relative, accompanied by the medical certificate and a statement of particulars, without application by petition to judge, magistrate, or justice. The medical man signing this certificate must have examined

the patient not more than two clear days before the reception of such person, and the order may be signed before or after the medical certificate ; the person so doing must be over twenty-one, and have personally seen the alleged lunatic within two days. If not a relative his connection with the patient and reasons for so signing must be stated.

An urgency order may be made before or after a petition has been presented. If before, it shall be referred to on the petition, and if after, a copy shall be sent to the judge, etc., to whom the petition has been presented. The order shall remain in force for seven days from date, or until the petition pending is disposed of.

It will therefore be seen that the urgency order does not do away with the necessity for the usual petition to a judge, magistrate, or justice, but allows a patient to be taken direct to an asylum, when time is of great importance.

Protection to persons signing Certificates.—Anyone who before or after the passing of this Act has signed a reception order, or a medical certificate that a person is of unsound mind, or a report under this Act, shall not be liable to any civil or criminal proceedings on any ground whatever, if he has acted in good faith and with reasonable care. Any such proceedings, if taken, may upon summary application to the High Court of Justice or a judge thereof, be stayed if there be no reasonable ground.

As many medical men take single cases of insanity into their houses, we think it will be useful if we here give the clauses in the new Act which especially concerns "single cases in private care."

Provisions for Single Patients.—In the Act as originally brought down to the House of Commons last year there was a clause which limited the class of case to be taken as "a single patient," to either cases of temporary insanity or insanity of old age. The College of Physicians, however, were so impressed with the unfair nature of this clause that, in their memorial to the Home Secretary, they strongly urged its alteration, and it was accordingly struck out.

Strange to say, however, we notice that in the form of certificates for medical men as the petition for reception there still remains in italics the following sentence :—"If the lunatic is to be received as a single patient in a house belonging to or kept by a medical practitioner under the order of a county court judge, magistrate, or justice, add the following paragraph :—I certify that A. B. is suffering from unsoundness of mind of a temporary character (or from decay of mind in old age, or is desirous of voluntarily submitting to care and treatment)."

This seemed to us so anomalous that we wrote to the authorities,

but so far have been able to obtain no clear explanation why this sentence, which seems useless now the clause has been altered, had not been struck out.

We are very pleased to note the wider latitude given to the "single treatment of insanity" than was at first thought would be the case, and, as some of our readers may remember, we have for a long time been strong advocates of this form of treatment in many cases of mental disease, though recognizing the fact that, for it to be properly carried out, it is of necessity a more or less expensive process.

The reception of single patients into private houses is subject to exactly the same laws as have been already mentioned with regard to the reception of patients into private asylums.

Two commissioners, one a medical and the other a legal commissioner, may, after one visit to a single patient, order his discharge, or, on the death of a person who has charge of a single patient, may transfer the patient to the care of some other person; or may at any time order the removal of a single patient from the care of one person to that of another; or may order the removal to an asylum; or they may direct that the medical attendant of a single patient shall cease to act as such, and may appoint some other medical attendant. In short, the commissioners have the fullest possible authority over the care of single patients, and any attempt to prevent their using this authority is a misdemeanour under the Act.

One or more of the commissioners must, at least once in every year, visit every unlicensed house in which a single patient is detained.

The most important clause, however, in connection with this part of the Act is the following:—"Under special circumstances the commissioners may allow more than one patient to be received as single patients into the same unlicensed house."

With regard to this clause, the editors of the "Jour. of Ment. Science" write as follows:—"It is not a little amusing, and is surely the very irony of fate, that a Bill brought in with the avowed purpose of abolishing private asylums should deliberately introduce a clause at the last moment, and under no pressure whatever from without, which restores private asylums to all intents and purposes without a licence; and, more important still, without the supervisory visitation required in the case of licensed houses."

Very especial attention should be given by medical men to the following clause:—"Any person who for payment takes charge of or receives to board or lodge any person as a lunatic shall be deemed to be a person deriving profit from the charge of a lunatic within the meaning of the Lunacy Act, 1845."

Just as we are concluding this article news comes to hand in the "Lancet" that the County Council of London are evidently earnest in their attempt to start an hospital as a complement to the existing asylum system, and with a resident and visiting medical staff, for the study and curative treatment of insanity. Mr. Brudenell Carter is chairman of the committee for enquiring into and reporting to the Council upon the advantages there might be expected from this system.

Space does not allow us to make any remarks upon this important matter, and we cannot do better than refer our readers not only to an admirable address given at the annual meeting of the Medico-Psychological Association, on July 25, 1889, by Dr. Hayes Newington, the president, which deals exhaustively with this subject, but also to the animated discussion which took place afterwards, and in which some of the leading physicians in our departments of medicine took part, and freely expressed their views on this important matter. The address and discussion will be found in the October number of the "Jour. of Ment. Science."

Lunatic Asylums and Homes for Inebriates In Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—*which in every case is stamped for reply*—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

ABERDEEN.—*Elmhill House.* Res. Med. Sup., Wm. Reid, M.D.; Treasurer, Wm. Carmie, 27, Exchange Street.

ABERGAVENNY.—*Joint Counties Asylum.* Med. Sup., James Glendinning, M.D.

ALTON (Hants).—*Westbrook House.* Prop., Mrs. E. J. Burnett.

ARGYLL and BUTE.—*District Asylum*, Lochgilphead. Res. Med. Sup., J. Cameron, M.D. Access—Rail to Greenock, thence by Steamer to Ardrishaig, 2½ miles distant.

ARMAGH.—*Course Lodge*, Richhill, 5 miles from Armagh (for ladies only). Proprietors, James and Wm. Orr; Visiting Physician, H. Frazer, M.D., Armagh. Access—Richhill Station, thence by own Conveyance, 2 miles. *See page* 700

The Retreat. Proprietor, Mr. A. D. Allen. (For 20 male and 15 female patients, middle class.) Access—Richhill, thence cab 1½ miles.

AYR.—*District Asylum.* Med. Sup., C. H. Skae, M.D.

BALLINASLOE (Co. Galway).—*District Lunatic Asylum.* Res. Med. Sup., R. V. Fletcher, M.D. Access—Ballinasloe.

BANFF.—*District Asylum*, Ladysbridge. Visiting Physician, Wm. Ferguson, M.D.

BARNOLDSWICK (Yorkshire).—*Greta Bank.* Prop., Mrs. Parker.

BASCHURCH (Shropshire). *Boreatton Park*, 10 miles from Shrewsbury. Med. Sup., Dr. Sankey. Access—Baschurch Station. *See page* 692

BATH.—*Bailbrook House.* Prop. and Res. Med. Sup., Lionel A. Weatherly, M.D. Access—Bath, 15 minutes' drive. *See page* 693

BECKENHAM (Kent).—*Springcroft.* Prop., Mrs. Stilwell.

BEDFORD.—*Bishopstone House*, Ashburham road (for 10 females). Prop. and Med. Sup., Wm. Simpson Craig, M.D. Access—Bedford.
See page 696.

Springfield House Asylum; 1 hour from London. Res. Med. Sup., D. Bower, M.D. Access—Bedford, 1½ mile.

BELFAST.—*Belfast District Lunatic Asylum.* Med. Sup., A. S. Merrick, M.D.

BEVERLEY.—*East Riding County Asylum.* Res. Med. Sup., M. D. Macleod, M.B. Access—Beverley Station, 2 miles.

BIRMINGHAM.—*Birmingham City Asylum*, Winson Green. Res. Med. Sup., E. B. Whitcombe. Access—Winson Green, ½ mile, Soho, ¼ mile.

Midland Counties Idiot Asylum. House Governor and Sec., W. G. Blatch; Hon. Med. Sup., J. H. Kimbell, F.R.C.S.; Med. Officer, R. H. Foster, M.R.C.S. Access—Knowle Station, ½ mile.

BODMIN.—*Cornwall County Asylum.* Med. Sup., Dr. R. Adams.

BOX (Wilts).—*Kingsdown House*, 5 miles from Bath. Prop., Mrs. E. A. Nash; Res. Med. Sup., Dr. J. J. F. Barnes. Access—Box.

BRENTWOOD.—*Essex County Asylum.* Med. Sup., Dr. G. Amsden.

BRIDGEND.—*Glamorgan County Asylum.* Res. Med. Sup., H. T. Pringle, M.D. Access—Bridgend, 1½ miles.

BRISTOL.—*Brislington House*, 2½ miles from Bristol. Res. Med. Sups., Drs. C. H. and B. B. Fox.

City and County Asylum. Med. Sup., Geo. Thompson, M.D.

Northwoods House, Winterbourne, 7 miles from Bristol. Props., Reginald Eager, M.D., and T. G. Seymour. Access—Cab from Bristol or from Fishponds, Yate, or Patchway Stations. *See page* 696

BRITON FERRY (Glamorgan).—*Vernon House*, near Neath and Swansea. Med. Sup., C. Pegge. Access—Briton Ferry Station, 3 minutes' walk. *See page* 700.

BROMSGROVE.—*Birmingham Borough Asylum*, Rubery Hill, near Bromsgrove. Res. Med. Sup., Dr. T. Lyle. Access—Rubery Station.

BURGESS HILL.—*St. George's Retreat*, Ditchling. Props., Misses Eccles.

BUXTON.—*Wye House.* Res. Phys., F. K. Dickson, F.R.C.P. Access—Buxton.

CAMBRIDGE.—*County Asylum*, Fulbourn. Res. Med. Sup., E. C. Rogers, M.R.C.S.

CANE HILL, Purley (Surrey).—*London County Asylum.* Res. Med. Sup., Dr. J. M. Moody. Access—Coulsdon Station.

CARLISLE.—*County Asylum.* Med. Sup., J. A. Campbell, M.D.

CARMARTHEN.—*Joint Counties Asylum.* Med. Sup., G. J. Hearder, M.D.

CHARTHAM (Near Canterbury).—*Kent County Asylum.* Res. Med. Sup., Dr. R. Spencer. Access—Chartham Station, 1 mile.

CHEADLE.—*Manchester Royal Lunatic Hospital.* Res. Med. Sup., G. W. Mould, M.R.C.S.

CHESTER.—*Cheshire County Asylum.* Med. Sup., J. H. Davidson, M.D.

CHURCH STRETTON.—*Stretton House*, Shrewsbury (for gentlemen). Med. Sup., Dr. C. A. P. Osburne. Access—Church Stretton Station, 10 minutes' walk.

The Grove House (for ladies). Res. Prop., Mrs. McLintock.

COLCHESTER.—*Eastern Counties Idiot Asylum.* Res. Med. Sup., J. Lloyd Roberts, M.B., B.A.; Res. Sup. and Sec., John J. C. Turner. Payment cases received from all parts. Election cases only from Eastern Counties.

CORK.—*Citadella Private Asylum.* Res. Phys., Dr. T. Gregg. 1 mile from Cork.

CUPAR (Fifeshire).—*Fife and Kinross District Asylum.* Med. Sup., A. R. Turnbull, M.B.

DARLINGTON (Durham).—*Dinsdale Park.* Med. Sup., J. W. Eastwood, M.D., J.P.

DARTFORD.—*City of London Asylum*, Stone. Res. Med. Sup., Dr. E. W. White. Access—S.E.R., Dartford, 1 mile.

DENBIGH (North Wales).—*North Wales Counties Lunatic Asylum.* Med. Sup., Dr. Llewelyn F. Cox. Access—Denbigh, 1 mile.

DERBY.—*County Asylum*, Mickleover. Med. Sup., Dr. Lindsay.

DEVIZES.—*Wilts County Asylum.* Res. Med. Sup., John Ireland Bowes, M.R.C.S. Access—Devizes, 1 mile.

DORCHESTER.—*Dorset County Asylum.* Med. Sup., P. W. Macdonald, M.D.

DRUMCONDRA (Co. Dublin).—*Hartfield Retreat.* Med. Prop., Dr. Lynch.

DUBLIN.—*Bloomfield Retreat*, Donnybrook Road. Med. Sup., Jas. H. Wharton, M.B.

Farnham House and Maryville, 3 miles from Dublin (for 60 patients, both sexes). Prop. and Med. Sup., A. Patten, M.B. Access—Cab from Dublin.

Hampstead, Highfield (for 40 males and 20 females), 2 miles from Dublin. Prop., J. Eustace, M.D.

House of St. John of God, Stillorgan. Med. Sup., Dr. McEvoy. Access—Stillorgan Station, ¼ mile. From Dublin 5 miles.

Woodbine Lodge, Bathfarnam, 6 miles (ladies). Prop., Mrs. Hayes.

DUDLEY (Stafford).—*Ashwood House*, Kingswinford, 4 miles from Dudley, 3 from Stourbridge (for 31 upper and middle class patients, male and female). Res. Prop., Dr. H. G. Peacock. Access—Stourbridge or Dudley Stations.

DUMFRIES.—*Crichton Royal Institution.* Med. Sup., James Rutherford, M.D., F.R.C.P.E., etc.

Southern Counties Asylum. Med. Sup., J. Rutherford, M.D.

DUNDEE.—*Royal Asylum*, West Green. Med. Sup., Jas. Rorie, M.D. Access—Dundee, 4 miles.

DURHAM.—*County Asylum*, near Durham. Res. Med. Sup., Robert Smith, M.D. Access—Sedgefield Station, 3 miles, thence by 'Bus.

EARLSWOOD.—*Asylum for Idiots.* Res. Med. Sup., Dr. Robert Jones. Males 400, females 200. Admission by election or payment of 50 to 200 guineas per annum. Apply to Sec., 36, King William Street London Bridge, E.C. Access—Earlswood Station, close to the Asylum; Red Hill Junction, 1½ miles.

EDINBURGH.—*Mavisbank House*, Polton, Midlothian. Res. Med. Sup., John Keay, M.D., C.M. Access—Polton Station, 5 minutes' walk. *See page* 693.

Midlothian and Peebles District Asylum. Res. Med. Sup., R. B. Mitchell, M.D. Access—Rosslynlee Station, 1 mile.

Mollendo House, Musselburgh. Prop., P. Mackenzie. Cons. Phys., Thos. R. Scott, M.D. Res. Phys., A. W. Mackenzie. Access—Musselburgh Station, 10 minutes' walk.

Royal Edinburgh Asylum, Morningside. Res. Med. Sup., T. S. Clouston, M.D., F.R.C.P.E.

Saughton Hall. Res. Med. Sup. and Prop., Dr. John Batty Tuke, M.D., F.R.C.P.E. Access—Gorgie Station, 15 minutes.

EGHAM.—*Holloway Sanatorium*, St. Ann's Heath, Virginia Water. Res. Med. Sup., Sutherland Rees Philipps, M.D. Access—Virginia Water Station, 3 minutes' walk.

ELGIN.—*District Asylum.* Med. Sup., J. W. N. Mackay, M.D.

ENNIS.—*District Asylum.* Res. Med. Sup., Richard Phillips Gelston, L.R.C.S.I.

ENNISCORTHY (Co. Wexford).—*District Lunatic Asylum.* Res Med. Sup., Thomas Drapes, M.B. Access—Enniscorthy, 1 mile.

EPSOM (Surrey).—*Church Street* (for 14 ladies). Med. Sup., Dr. W. Clement Daniel. Access—Epsom Station, 5 minutes' walk.

EXETER.—*City Asylum*, Heavitree. Res. Med. Sup., R. L. Rutherford, M.D.

Court Hall, Kenton. Med. Sup., A. de Winter Baker, L.R.C.P. Access—Starcross, 1 mile.

Devon County Asylum, Exminster. Med. Sup., G. J. S. Saunders, M.D. Access—Exminster Station, 1 mile ; Exeter, 4 miles.

Wonford House (Hospital for the Insane). Res. Med. Sup., P. Maury Deas, M.B., M.S. Lond. Access—Exeter Station, 1½ miles.

See page 695.

FAIRFORD (Gloucestershire).—*Fairford Retreat.* Res. Med. Sup., Daniel Iles, M.R.C.S. Access—Fairford Station.

The Croft House Private Asylum, near Swindon and Cirencester. Med. Sup., Dr. C. H. Bloxsome. Access—Fairford Station.

GATESHEAD.—*Dunston Lodge Asylum*, Newcastle and Gateshead-on-Tyne. Med. Sup., W. Marshall Taylor, M.A., M.R.C.S.E. Access—Newcastle-on-Tyne Station, 3 miles.

GLASGOW.—*District Asylum.* Med. Sup., A. C. Clark, M.D.

Royal Asylum, Gartnavel. Res. Med. Sup., D. Yellowlees, M.D., LL.D.

GLOUCESTER.—*Barnwood House.* Res. Med. Sup., F. Needham, M.D. Access—Gloucester, 2 miles.

Gloucester County Lunatic Asylums, Wotton and Barnwood, Gloucester. Res. Med. Sup., F. Hurst Craddock, B.A. Oxon, M.R.C.S. Access—Gloucester Station, 1 mile.

GOUDHURST (Kent).—*Tattlebury House* (for 6 males and 2 females). Med. Sup. and Prop., R. S. Newington, M.R.C.S., L.S.A. Access—Marden Station, 5 miles.

GREAT YARMOUTH.—*Royal Naval Hospital.* Dr. Thomas Browne, R.N., Fleet Surgeon in charge. Access—Great Yarmouth Station, ½ mile. For Naval patients only, admitted by Admiralty order.

HADDINGTON.—*District Asylum*, 17 miles from Edinburgh. Cons. Surg., T. Howden, M.D., L.R.C.S., Maitlandfield. Med. Sup., J. Bruce-Ronaldson, F.R.C.S.E., etc. Access—Haddington Station, 10 minutes' walk.

HARPENDEN (St. Alban's).—*Harpenden Hall*, 4 miles from St. Alban's (for 10 ladies). Prop. and Res. Med. Sup., A. Maclean, L.R.C.S. Ed., L.S.A. Lond. Access—Harpenden Station. *See page* 696.

HATTON (near Warwick).—*County Asylum.* Med. Sup., Alfred Miller, M.B.

HAWKHURST (Kent).—*North Grove House*, 15 miles from Hastings and Tunbridge Wells. Phys., W. M. Harmer, F.R.C.P. Access—Etchingham Station, 5 miles; Staplehurst Station, 10 miles.

See page 698.

HAYWARD'S HEATH.—*Sussex County Asylum.* Med. Sup., C. E. Saunders, M.D.

HENLEY-IN-ARDEN (Warwickshire).—*Glendossil and Hurst House* (for both sexes). Res. Prop., Dr. S. H. Agar. Access—Great Western Railway.

HEREFORD.—*County and City Asylum.* Med. Sup., T. A. Chapman, M.D.

HITCHIN (Herts).—*Three Counties Asylum*, Stotfold. Med. Sup., E. Swain, L.R.C.P. Access—Three Counties Station, 1 mile.

HOLLINGTON (Sussex).—*Ashbrook Hall* (for ladies). Res. Prop., Mrs. Letitia A. Hitch. Access—Station, Warrior Square, St. Leonards-on-Sea, half-an-hour's walk.

HULL.—*Borough Asylum.* Med. Sup., J. Merson, M.D. Access—Willesby Station, 1 mile.

Marfleet Lane Retreat, Sculcoates. Prop., J. Brown. Access—Hull, 1 mile.

INVERNESS.—*District Asylum.* Med. Sup., Thos. Aitken, M.D. Access—Inverness, 2½ miles.

IPSWICH.—*Borough Asylum.* Med. Sup., Dr. B. Chevallier.

ISLE OF MAN.—*Lunatic Asylum*, Union Mills. Med. Sup., W. Richardson, M.D. Access—Douglas, 3 miles.

ISLEWORTH (Middlesex).—*Wyke House.* Prop., E. Sparshall Willett, M.D. Access—Isleworth, Brentford, and Osterley Stations, 1 mile.

KILLARNEY.—*District Asylum.* Med. Sup., Oscar Woods, M.D. Access—Killarney, ½ mile.

KINGSTON-ON-THAMES.—*Canbury House.* Prop., W. H. Roots, M.R.C.S.

KNOWLE (near Fareham).—*County Asylum.* Med. Sup., T. B. Worthington, M.D.

LANCASTER.—*County Asylum.* Res. Med. Sup., David M. Cassidy, M.D., D.Sc. Access—Lancaster Station.

LEICESTER.—*Borough Asylum.* Med. Sup., J. E. M. Finch, M.D.

Leicestershire and Rutland Asylum. Med. Sup., Dr. W. H. Higgins.

LETTERKENNY and LONDONDERRY.—*County Donegal Asylum.* Res. Med. Sup., G. W. Hatchell, R.C.S.I. Access—Letterkenny and Lough Swilley Railway, ½ mile.

LEYTON (Essex).—*The Great House.* Prop., Mrs. Davey.

LICHFIELD.—*County Lunatic Asylum*, Burntwood, near Lichfield. Res. Med. Sup., James Beveridge Spence, M.D. Access—Lichfield City Station, 3½ miles; Trent Valley Station, 4½ miles; Hammerwich, 1½ mile.

LINCOLN.—*County Asylum*, Bracebridge. Med. Sup., J. W. Marsh, M.R.C.S.

Lincoln Lunatic Hospital, The Lawn. Res. Med. Sup., Arthur P. Russell, M.R.C.P. Access—Lincoln Station, 1 mile.

LIVERPOOL.—*Shaftesbury House.* Near Liverpool and Southport. Res. Med. Sup., Stanley A. Gill, B.A., M.R.C.P.Lond. Access—Formby Station, ¼ mile distant. *See page* 690.

Tue Brook Villa, 3 miles from Liverpool. Res. Med. Sup., B. Hall, M.B. (For 52 males and females.) Access—Tue Brook Station. *See page* 697.

LONDON.—*Bethlem Royal Hospital*, St. George's Road, London, S.E. Res. Med. Sup., R. Percy Smith, M.D. *See page* 697.

Bethnal House, Cambridge Road, N.E. Res. Med. Sup., J. Kennedy Will, M.D. Access—Railway Station near East London Museum.

Blacklands House, King's Road, Chelsea, S. W. Res. Med. Sup., E. T. Hall, M.R.C.S. Access—Sloan Station, ¼ mile.

Brooke House, Clapton. Med. Props., Dr. H. Monro and Dr. J. O Adams; Res. Med. Sup., Dr. J. O. Adams. Access—Clapton Station.

Camberwell House, S.E. Med. Sup., J. H. Paul, M.D.

Flower House, Catford Bridge, S.E. Med. Sup., C. A. Mercier, M.B. Access—C. and D. Rly., Beckenham Junc., 1 mile.

Grove Hall, Bow (both sexes). Med. Lics., Mr. Byas and Dr. Mickle. Access—Bow Road and Bow Stations, ⅛ mile.

Halliford House, Sunbury-on-Thames, S.W. Res. Med. Sup., W. Stephenson Richmond, M.R.C.S. Access—Sunbury Station, 1¼ mile.

Hayes, Wood End House (ladies). Uxbridge, 3 miles, London 12 miles. Med. Lics., Dr. H. Stilwell and Mrs. Robinson. Access—Hayes Station, 1 mile.

Hayes Park, Hayes, Middlesex, near Uxbridge. Res. Med. Sup., Ed. Benbow and H. F. Winslow, M.D. Access—Hayes Station, 2 miles.

Hendon Grove Asylum, Hendon, Middlesex. Res. Med. Lic., Dr. H. Hicks. Access—By Mid. Rly., Hendon Station, ½ mile, or Bus from Swiss Cottage, St. John's Wood, N.W.

Homelea, Hammersmith, W. Prop., Mrs. Buck.

Hoxton House, London, N. Res. Med. Sup., John F. Woods. Access—Shoreditch Station, two minutes' walk; Liverpool Street Station, ten minutes' walk.

Ivy Lodge, Upper Tooting, S.W. Prop., G. C. Dale, M.D.

Lawn House, Hanwell, W. Prop., Miss Dixon.

London County Asylum, Hanwell, W. Med. Sups., R. R. Alexander, M.D., and J. P. Richards, M.R.C.S.

Manor House, Chiswick, and 37, Albemarle St., W. Lics., Mrs, Tuke and Thos. Seymour Tuke, B.A. Oxon (Res). C. M. Tuke. M.R.C.S.E. Access—Turnham Green Station, ⅓ mile.

Middlesex County Asylum, Banstead, S.E. Med. Sup., T. C. Shaw, M.D.

Middlesex County Asylum, Colney Hatch, N. Med. Sups., W. J. Seward, M.B., and W. G. Marshall, F.R.C.S.

Moorcroft House, Hillingdon (males). Uxbridge, 2 miles, London, 13 miles. Med. Lics., Drs. Stilwell and Johnston. Access—West Drayton Station, 2 miles.

Munster House, Fulham. Prop., G. F. Blandford, M.D.

Normansfield, Hampton Wick. Prop., J. L. H. Down, M.D.

Northumberland House, Green Lanes, N. Prop., A. H. Stocker, M.D. Res. Med. Sup., John Warnock, M.D. Access—Finsbury Park Station.

Notting Hill, Royal Crescent. Prop., H. C. Smith, M.R.C.S.

Otto House, 47, North End Road, Hammersmith, W. Med. Sup., Dr. H. Sutherland. Access—West Kensington Station, ¼ mile.

Peckham House, Peckham, S.E. Prop., Alonzo H. Stocker, M.D. Med. Sup., Finlay Murchison, M.B. Access—Peckham Rye Station, 10 minutes' walk.

Peterborough House, Fulham. Res. Med. Sup., James Robt. Hill. Access—Parsons' Green or Chelsea Station, 5 minutes' walk.

Royal Indian Asylum, Ealing, W. Res. Med. Sup., Thos. B. Christie, M.D., C.I.E. Access—Ealing Station, 1 mile; Ealing Common Station, ½ mile.

Silverton House, Peckham Rye. Prop., Mrs. A. G. Preston.

St. Luke's Hospital, Old Street, E.C. Med. Sup., G. Mickley, M.B.

Surrey County Asylum, Tooting, S.W. Med. Sup., H. G. Hill, M.R.C.S.

Sutherland House, Surbiton, near Kingston-on-Thames (ladies). Res. Med. Sup., Robt. Collum, M.D. Access—Surbiton, ¼ mile.

The Huguenots, East Hill, Wandsworth, S.W. (ladies). Prop., Miss Leech. Access—Clapham Junction Station.

The Priory, Roehampton, S.W., near Richmond. Res. Med. Sup., T. Bigland, M.R.C.S. Access—Barnes Station, 8 minutes' walk.

The Shrubbery, Southall (females). Prop., Miss H. J. Rosser. Access—Southall Station, ¼ mile.

Vine Cottage, Norwood Green, Southall. Prop., Mrs. Chalk. Access—Southall Station, 1 mile.

MACCLESFIELD.—*Parkside Asylum.* Res. Med. Sup., T. Steele Sheldon, M.B. Lond. Access—Macclesfield Station, 1 mile.

MAIDSTONE.—*Kent County Asylum.* Res. Med. Sup., F. Pritchard Davies, M.D. Access—Maidstone Station, 1½ miles.

West Malling Place (for 18 males and 21 females). Res. Med. Sup., Dr. James Adam. Access—Malling Station, 1 mile.

MARKET LAVINGTON (Wilts).—*Fiddington House.* Prop. and Med. Sup., C. Hitchcock, M.D. Access—Devizes Station, 6 miles.

MELROSE, N.B.—*Roxburgh District Asylum.* Res. Med. Sup., J. C. Johnstone, M.B. Access—Melrose, 1 mile.

MELTON.—*Suffolk County Asylum*, Melton, near Woodbridge. Res. Phys. and Sup., Wilson Eager, L.R.C.P. Access—Melton Station, ¼ mile; Woodbridge Station, 2¼ miles.

MOATE.—*Spring Lawn*, Moate, near Clara and Tullamore. Med. Sup., Thomas Fitzpatrick, L.R.C.S.I. Prop., the Misses Peppard. Access—Moate Station, 2 miles; Clara Station, 3 miles.

MONAGHAN (Ireland).—*District Asylum*, Res. Med. Sup., Dr. Edward Taylor. Access—Monaghan, ¼ mile.

MONTROSE, N.B.—*Montrose Royal Lunatic Asylum.* Res. Med. Sup., J. C. Howden, M.D. Access—Hillside Station, ¼ mile; Dubton Station, 1 mile.

MORPETH.—*Northumberland County Asylum.* Res. Med. Sup., Thos. W. Mac Dowall, M.D. Access—Morpeth Station, 1 mile, by 'Bus.

MOULSFORD (Berks).—*Berks County Asylum.* Med. Sup., J. H. Douty, M.R.C.S.

NELSON-IN-MARSDEN (Lanc.).—*Marsden Hall* (for both sexes). Res. Prop., Mrs. Bennett; Med. Sup., Dr. A. P. Millar. Access—Nelson or Colne Stations.

NEWCASTLE-ON-TYNE.—*City County Asylum*, Gosforth. Med. Sup., R. H. B. Wickham, M.D.

NEWTON-LE-WILLOWS.—*Haydock Lodge.* Med. Prop., E. H. Beaman, M.R.C.S.E.; Res. Med. Sup., Dr. C. T. Street. Access—Newton-le-Willows Station, 2 miles.

NORTHAMPTON.—*Abington Abbey Retreat*, 1¼ mile to centre of town. Prop., H. S. Prichard. Med. Sup., Geo. H. Percival, M.B. Regular visits every other day, others when necessary. Access—Northampton Stations; and cabs in waiting to convey fares to any part of the neighbourhood. *See page* 694.

Berrywood Asylum. Res. Med. Sup., Dr. R. Greene. Access—Castle Station, 2 miles: Midland Station, 2½ miles. *See page* 695.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

NORWICH.—*Heigham Hall.* Res. Prop., C. J. Watson, M.R.C.S.

Norfolk County Asylum, Thorpe. Res. Med. Sup., David G. Thomson, M.D. Access—Norwich (Thorpe) Station, 2 miles.

Norwich City Asylum, Hellesdon. Private patients received at low rates. Res. Med. Sup., Dr. Wm. Harris, F.R.C.S., M.R.C.P., L.S.A.; Con. Phys., Dr. Bateman, F.R.C.P.; Lady Sup., Mrs. Harris. Access—Thorpe, cab fare 4/-; Victoria Station, cab fare 3/6; City Station, fare 3/-; Hellesdon Station, ½ mile.

The Bethel Hospital for the Insane. Res. Med. Sup., J. Fielding, M.D.; Con. Phys., Dr. Bateman, F.R.C.P. Access—Thorpe Station, 1 mile.

The Grove, Old Catton, 1 mile (ladies). Props., Mr. and Mrs. T. J. C. Rackham. Med. Sup., C. Williams, F.R.C.S. Access—By carriage.

NOTTINGHAM.—*Borough Asylum*, Mapperley Hill. Med. Sup., E. Powell, M.R.C.S.

County Asylum, Snenton. Res. Med. Sup., Dr. A. Aplin. Access—Mid. and Gt. North. Station, about 15 minutes' walk.

The Coppice. Res. Med. Sup., W. B. Tate, M.D. Access—Mid. and Gt. North. Station, 2½ miles.

OMAGH.—*District Asylum.* Res. Med. Sup., Geo. E. Carre, M.B. Access—Omagh Station, 2 miles.

OXFORD.—*Oxford County Asylum.* Res. Med. Sup., R. H. H. Sankey, M.R.C.S. Access—Littlemore Station.

Warneford Asylum, Oxford 1½ mile (for private patients only). Res. Med. Sup., J. Bywater Ward, M.D. Access—Oxford Station, 2¼ miles.

PERTH.—*District Asylum.* Med. Sup., C. M. Campbell, M.D.

James Murray's Royal Asylum (for private patients only), Perth and Kincarrathie, Scotland. Res. Phys. and Sup., Dr. Urquhart. Access—Perth, under 2 miles. *See page* 692.

PLYMOUTH.—*Plympton House*, Plympton, S. Devon. Res. Med. Sup., Charles Aldridge, M.D. Access—Plympton, 1 mile; Marsh Mills, 2 miles.

PORTSMOUTH.—*Borough Asylum.* Med. Sup., W. C. Bland., M.R.C.S.

PRESTWICH (near Manchester).—*County Asylum.* Med. Sup., Henry R. Ley, M.R.C.S.

Overdale, Outwood. Prop., Mr. H. B. Lomas; Med. Visitor, James Holmes, M.D. Access—Prestwich, 1½ miles; Molyneux Brow, 1 mile.

See page 691.

RAINHILL (near Prescot).—*County Asylum.* Med. Sup., T. Wigleworth, M.D.

ROTHERHAM (Yorkshire).—*Grange Hall*, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Props., J. G. Atkinson, M.D., and C. Clapham, M.D. Access—Grange Lane Station, ½ mile.

SALISBURY.—*Fisherton House Asylum.* Med. Sup., William Corbin Finch, M.D. Access—Salisbury Station, 5 minutes' walk.

Laverstock House. Prop., J. Haynes; Med. Sup., Hy. J. Manning, M.R.C.S.

SANDOWN.—*The Briars.* Prop., Mrs. Steward.

SHREWSBURY.—*Salop and Montgomery Counties Lunatic Asylum.* Res. Med. Sup., Arthur Strange, M.D. Access—Shrewsbury Station, 2½ miles.

STAFFORD.—*County Lunatic Asylum.* Res. Med. Sup., Dr. J. W. Stirling Christie. Access—Stafford Station, 1 mile.

Institution for the Insane. Coton Hill, Med. Sup., Dr. R. W. Hewson.

STARCROSS (near Exeter).—*Western Counties Idiot Asylum.* Res. Sup., William Locke. Access—Starcross Station, 5 minutes' walk.

STIRLING.—*District Asylum.* Med. Sup., Dr. MacPherson.

STONE (near Aylesbury).—*Bucks County Asylum.* Res. Med. Sup., J. Humphry, M.R.C.S. Access—Stone Stations, 3 miles.

SUTTON (Surrey).—*The Croshams.* Prop., F. D. Atkins, M.R.C.S.

TAMWORTH (Staffs.).—*The Moat House* (for ladies). Res. Prop., J. F. Woody, M.R.C.S.

TICEHURST (Sussex).—*Asylum.* Props., H. F. H. Newington, M.R.C.P., and A. S. L. Newington, M.B.

WADSEY (near Sheffield).—*West Riding of Yorkshire Asylum.* Med. Sup., W. S. Kay, M.D.

WAKEFIELD.—*West Riding Asylum.* Med. Sup., Dr. W. B. Lewis.

WELLS.—*Somerset and Bath Asylum*, Wells, Somerset. Res. Med. Sup., A. Law Wade, B.A., M.D., T.C.D. Access—Wells, 2 miles; Masbury, 2½ miles.

WEYHILL (near Andover).—*Fyfield House.* Prop., W. J. H. Lush, M.D.; Res. Med. Sup., C. V. Helsdon, M.R.C.S. Access—Andover Junction, 5 miles.

WHITCHURCH (Salop).—*St. Mary's House.* Med. Sup., S. T. Gwynn M.D. Access—Whitchurch Station, 1½ miles.

WHITTINGHAM (near Preston).—*County Asylum.* Med. Sup. J. A. Wallis, M.D.

WINCHELSEA (Sussex).—*Periteau House*, near Hastings (ladies). Prop. and Med. Sup., R. V. Skinner, M.R.C.S. Access—Winchelsea Station.

WOKING.—*Surrey County Asylum*, Brookwood. Med. Sup., Dr. J. E. Barton.

WORCESTER.—*County and City Lunatic Asylum*, Powick. Res. Med. Sup., E. Marriott Cook, M.B. Access—Worcester Station, 4½ miles.

YORK.—*Grove House*, Acomb, 2 miles from York (for 30 ladies). Prop., Miss Cooney; Medical Attendant, Dr. Nelson. Access—York, 2 miles, thence by cab.

Lawrence House (for 8 males and 14 females). Prop. and Med. Sup., G. I. Swanson, M.D. Access—York.

Lime Tree House (6 males and 4 females). Res. Med. Sup., W. J. Nelson. Access—York Station, 2 miles, by cab.

North Riding of Yorkshire Asylum. Res. Med. Sup., J. Tregelles Hingston. Access—York, 2 miles.

The Friends' Retreat. Med. Sup., R. Baker, M.D.

York Lunatic Asylum, Bootham. Res. Med. Sup., C. K. Hitchcock, M.D., M.A. Cantab. Access—York, 1 mile. *See page* 697.

TRAINING INSTITUTIONS.

CHILCOMPTON (near Bath).—*Downside Lodge.* Med. Sup., Alex. Waugh, M.D. Access—Chilcompton Station, about ¼ mile. *See page* 694.

KINGSTON-ON-THAMES.—Normansfield Training Institution (for backward and feeble-minded children). Med. Sup., Dr. Langdon Down. For 100 male and 60 female patients of the upper class. Access—Hampton Wick Station, 5 minutes' walk.

LANCASTER.—*Royal Albert Asylum* (for idiots and imbeciles of the Northern counties. For 600 patients). Res. Med. Sup., G. E. Shuttleworth, B.A., M.D.; Sec., James Diggens. Admission by election, or at various rates of payment. Access—Lancaster Station, 1 mile. *See page* 679.

Brunton House, a home for special private pupils under training at the Royal Albert Asylum. Sec., James Diggens. Access as above.

Homes for Inebriates.

Formalities necessary before the reception of a patient under the Habitual Drunkard's Act of 1879.

The patient must sign the "Form of application for admission," expressing the wish to enter the retreat, before two magistrates, who must be present at the time, and themselves sign the form on the same occasion. This matter can be completed at the private residence of the patient, or on arrival at the retreat. It is also necessary that two friends of the patient should sign, before a magistrate or commissioner, a statutory declaration that they consider the patient an "Habitual Drunkard," within the meaning of the Act of 1879.

BRISTOL.—*Dunmurry*, Sneyd Park, Clifton. Res. Med. Prop., Dr. James Stewart. Access—Bristol or Clifton Down Stations, thence by cab. *See page* 698,

Kingswood Park (for gentlemen) ; *Leigh House* (for ladies). Med. Sup., H. Grace, L.R.C.P.; Cons. Phys., Owen Pritchard, M.D. Access—Mangotsfield or Bristol Stations, direct by carriage.

CROYDON.—*St. Raphael's*, Woodside (ladies). Apply Secretary.

DUNVEGAN (Isle of Skye).—*Kinlock.* Res. Prop., Dr. John Maclean. Est. 1854. Access—Dunara Castle and Hebridian Steamers to Dunvegan from Glasgow, and Highland Rly. to Strome.

EARL'S COLNE (Essex).—*Buxton House.* Prop., Miss Pudney ; Med. Sup., J. Taylor, M.R.C.S.

HALESOWEN.—*Colman Hill House Retreat* (for ladies), near Birmingham. Lady Sup., Miss Cooper ; Res. Med. Sup., Harrison Branthwaite, F.R.C.S. Access—Halesowen Station, 1½ miles.

LEICESTER.—*Tower House.* Prop., Mrs. Theobald ; Med. Sup., Dr. J. St. T. Clarke.

LONDON.—*High Shot House*, Twickenham, S.W. Med. Sup., H. Branthwaite, F.R.C.S.

RICKMANSWORTH (Herts).—*Dalrymple Home* (for 20 male patients). Res. Med. Sup., R. Welsh Branthwaite, L.R.C.P. Access—Rickmansworth Station, Metropolitan Rly., ½ mile; L. & N.W. Rly., 1 mile. *See page* 695.

STONEHAVEN (N.B.).—*Elsick House.* Prop., D. Forbes.

WALSALL.—*Old Park Hall Retreat.* Birmingham, 6 miles. Res. Med. Sup., Fredk. John Gray. Access—Walsall Station, 1¾ miles.

WESTGATE-ON-SEA.—*Tower House Retreat.* Prop., Mr. J. H. Brown ; Con. Phy., A. F. Street, M.D.

Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return our letter of enquiry which is *stamped for reply*. This will account for some omissions in the present edition.

ABERDEEN.—*Deeside Hydropathic Establishment*, Heathcot, near Aberdeen.—Res. Med. Sup., Alexander Stewart, M.D., LL.D., F.A.S. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles.

See page 701.

BASLOW (near Chesterfield). *Baslow Hydropathic Establishment*, near Chatsworth Park, Derbyshire. Res. Med. Sup., E. M. Wrench, F.R.C.S. Access—Rowsley Station, 4½ miles.

BATH.—*West of England Hydropathic Establishment*, Limpley Stoke, near Bath. Res. Med. Sup., Dr. J. P. Aston. Access—Limpley Stoke Station.

BEN RHYDDING.—*Ben Rhydding.* Near Leeds, Bradford, or Harrogate. Phys., Thos. Johnston, M.D., M.R.C.P. Access—Ben Rhydding Station, a few hundred yards.

BISHOPS-TEIGNTON (near Teignmouth).—*The South Devon Health Resort.* Prop., C. F. Carpenter. Med. Sup., R. D. Broughton, M.R.C.S. Access—Teignmouth Station, 2½ miles.

BOURNEMOUTH (Hampshire).—*Bourne Hall*, a residence under medical direction (not a Hydropathic or confirmed Invalid Establishment). Res. Phys., Ed. P. Philpots, M.D. Access—Bournemouth, West Station, 1 minute's walk.

Bournemouth Hydropathic Establishment. Res. Prop., James Osborne, M.D. Access—Bournemouth, East Station, 1 mile; West Station, ¼ mile.

The Mont Dore.

BRIDGE OF ALLAN.—*Bridge of Allan Hydropathic Co.* Manager, J. Mackay. Access—Bridge of Allan Station, ½ mile.

BUTE.—*Kyles of Bute Hydropathic*, Port Bannantyne. Sec., D. H. Jack; Med. Sup., Dr. A. J. Hall. Access—Clyde Steamers call in summer.

BUXTON.—*Buxton Hydropathic and Winter Residence.* Access—Buxton Station, 4 minutes' walk.

The Peak Hydropathic Residence. Manageress, Mrs. MacGregor. Res. Med. Sup., S. Hyde, L.R.C.P.

Clarendon House Hydropathic.

CALLANDER.—*The Callander and Trossach's Hydropathic Co., Limited*, Callander. Sup., Miss Thompson. Access—Callander Station, 1 mile, and 'Bus awaits all trains. *See page* 699.

COLWYN BAY (North Wales).—*Colwyn Bay Hydropathic and Winter Residence.* Med. Sup., Dr. M. V. Williams. Access—Colwyn Bay Station, 7 minutes' walk.

CORK.—*St. Ann's Hill Hydropathic.* Res. Phys., M. Altdorfer, M.D. Access—Blarney Station, 2½ miles distant; Muskerry Light Ry. from Cork, Station on grounds. *See page* 702.

CRIEFF.—*Strathearn House* (17 miles from Perth). Res. Med. Sup., Thos. H. Meikle, M.D., J.P. Access—Crieff Station, 1 mile.

DUNBLANE.—*Dunblane Hydropathic*, Stirling. Vis. Med. Sup., Dr. Thos. Brown. Access—Dunblane Station, 1 mile.

EDINBURGH.—*Craiglockhart Hydropathic.* Man., Jas. Drummond.

FARNBOROUGH (Hants).—*The Pine Therapeutic Establishment.* Apply to the Secretary.

FOLKESTONE.—*Capel Lodge.* (Near Folkestone.) Prop., E. Norton, M.D. Access—Folkestone Junction, 2 miles.

Folkestone Bathing Establishment Co., Limited. Access—Shorncliff, Radnor Park, and Junction Stations.

FORRES.—*Cluny Hill Hydropathic.* Res. Man. Dir., W. Raff; Vis. Phys., Dr. Leslie H. Milne. Access—Forres Station, 1 mile; Inverness, 24 miles.

GRANGE-OVER-SANDS.—*Hazlewood Hydropathic.* Con. Phys., Dr. Anderson.

HARROGATE (Yorkshire).—*The Harrogate Hydropathic Establishment.* Med. Sup., Geo. Tennant, M.B.

The Imperial Sanatorium and Electropathic Establishment, Royal Parade. Res. Med. Officer, J. R. Tunmer, M.R.C.S.E., etc.

HASTINGS (St. Leonard's).—*The Spa Hydropathic Establishment.* Access—Hastings Station, 1 mile.

HEXHAM (Northumberland).—*Tynedale Hydropathic.* Prop., F. G. Grant; Med. Sup., Thos. Stainthorpe, M.D. Access—Hexham; Newcastle, 19 miles.

ILKLEY (Yorkshire).—*Craiglands Hydropathic.* Props., Dobson Bros. Med. Sup., Henry Dobson, M.D., C.M.

Ilkley Wells House Hydropathic. Med. Sup., Thos. Scott, M.D. Access—Ilkley Station, ¼ mile.

The Spa Hydropathic. (Near Leeds and Bradford.) Med. Sup., Thos. Johnstone, M.D., M.R.C.P. Access—Ilkley, Yorks and Mid.Rys.

Troutbeck Hydropathic Establishment and Sanatorium. Res. Med. Sup., Henry Dobson, M.D., C.M. Props., Dobson Bros.

LLANDUDNO (North Wales).—*Hydropathic and Winter Residence.* Res. Med. Sup., H. Thomas, M.D., F.R.M.S. Access—Llandudno Station, 5 minutes.

The Sanatorium. Med. Sups., Drs. Bold Williams, Dalton, Davies and Craig. Access—Llandudno Station, 10 minutes.

MALVERN.—*Dr. Rayner's Hydropathic.* Res. Phys., T. Rayner, M.D. Access—Great Malvern Station, ½ mile. *See page* 699.

Dr. Johnson's Hill-Cure and Hydropathic. Med. Sup., Walter Johnson, M.B.

Wyche-side Hydropathic. Res. Phys., Dr. Grindrod.

MATLOCK.—*Bridge Hall.* Prop., R. Nicholson. Access—Matlock Bridge Station.

Elm Tree House. Prop., Wm. Bramald. Access—Matlock Bridge Station, ½ mile.

Jackson House, Matlock Bank, Matlock Bridge. Med. Sup., Dr. Moxon. Prop., Mr. J. L. Dean. Access—Near Matlock Bridge Station.

Smedley's Hydropathic Establishment, Matlock Bridge. Phys., Wm. B. Hunter, M.D., and (Res.) Chas. J. Whitby, B.A., M.B. Access—Matlock Bridge Station, ½ mile; Omnibus. *See page* 702.

The Clarence, Matlock Bath, close to Station. Prop., R. Nicholson.

MELROSE.—*Waverley Hydropathic.* Med. Sup., Dr. Somerville. Access—Melrose Station, 1 mile.

MOFFAT.—*The Moffat Hydropathic.* Prop., J. Farquharson.

PEEBLES.—*Peebles Hydropathic.* Access—Peebles Stations, 1 mile.

PITLOCHRY.—*Athole Hydropathic.* Prop., W. Macdonald.

RHYL.—*North Wales Hydropathic.* Phys. Dr. W. Thomas.

ROTHESAY (Bute).—*Glenburn Hydropathic.* Res. Prop., Dr. Philp. *See page* 700.

SHANDON (by Helensburgh).—*Shandon Hydropathic.* Access—Steamer to Shandon Pier.

SOUTHPORT.—*Southport "Smedley" Hydropathic*, Birkdale Park. Phys., F. A. Ernest Barnardo, L.K.Q.C.P.I., L.R.C.S.I., etc. Access—Southport Station, 1 mile, and Birkdale Station, ¼ mile.

The Limes Hydropathic (near Promenade). Access—Chapel Street, Lord Street or Central Stations.

TORQUAY.—*The Torquay Hydropathic.* Access—Torquay Station, 1 mile.

TUNBRIDGE WELLS.—*The Spa.* Phys., Dr. G. L. Pardington. Access—Tunbridge Station, about ½ mile. *See page* 699.

ULVERSTON AND BARROW-IN-FURNESS.—*Conishead Priory Hydropathic.* Access—Carnforth or Hellifield Stations.

WATFORD.—*The Hall*, Bushey. Res. Phys. and Med. Sup., R. J. Banning, M.D., J.P. Access—Bushey Station, 1 mile. *See page* 702.

WEMYSS BAY.—*Wemyss Bay Hydropathic.* Med. Sup., Ronald Currie, M.D., C.M. Access—Wemyss Bay Station, *via* Glasgow, ½ mile.

WINDERMERE.—*Windermere Hydropathic*, near Kendal. Res. Med. Sups., Thos. Dobson, M.D., R. Clegg, L.R.C.P. Access—Windermere Station, 1 mile. Furness (Bowness Landing Steps), ¼ mile.

Private Homes for Invalids.

BOURNEMOUTH.—*Overton Hall*, West Cliff. Res. Prop., Dr. M. Watson.

JEDBURGH.—*Abbey Green.* Res. Prop., Wm. Blair, M.D. Access—N. B. Rly., Jedburgh, ¾ mile. *See page* 694.

New Inventions and Progress of Pharmacy.

It has been one of the aims of the "Medical Annual" since its foundation to give in a convenient form for reference, particulars of the new appliances and medicinal preparations which have been introduced during the year. Such information is often of more practical value to the medical man than a description of the most recently discovered microbe, and it is our wish to make this portion of the work as complete as possible. All we ask of manufacturers is that they will send us samples of any novelties they may produce, at the earliest possible moment, so that we may have time for their careful examination and trial before we give an opinion concerning them.

There is no longer need to call the attention of the Pharmacist to the great revolution which has taken place in the methods of practice and in the mode of prescribing; we have evidence on all sides of the endeavour to meet the requirements of the practitioner and the patient, and we know that an immense impetus has been given to the trade of those firms who were early to recognize the necessity of doing so. At the present moment the large wholesale druggists appear likely to take the whole supply of medical and surgical necessaries upon themselves. The lethargy on the part of the Surgical Instrument Manufacturers has undoubtedly tended to this result. In the excellence of their work as Surgical Cutlers they excel those of every other nation in the world, but we have almost given up expecting that they will send us improved and cheaper specimens of the every day appliances which are needed in general practice.

The new productions sent to us this year are of a distinctly practical character, and they all show a reasonable regard for economy, a point which has been too much overlooked in the past.

APPLIANCES AND DRESSINGS.

Throat Spray with Tongue Depressor.—We have for a long time been looking for an appliance which would throw a spray upon the pharynx and not upon the back of the tongue, and we found one at a local chemist's a little while ago which answered every purpose admirably. The delivery tube is four inches in length, and beneath it is placed a really serviceable tongue depressor, so that the pharynx

or larynx can be sprayed directly and with precision. The spray is also very finely atomised. We have now received one of these excellent appliances from Messrs. Sumner & Co., of Liverpool, who are the manufacturers, and we can commend it to the profession after careful trial.

Bag for Medical Officers of Health.—This bag, manufactured by Messrs. Ferris & Co., Bristol, at the suggestion of Mr. H. Geary Dyer (Medical Officer of Health, Ringwood Rural Sanitary District), will prove invaluable to Medical Officers of Health. It is extremely handy and most compactly fitted up with everything requisite for testing for all impurities likely to be found,—such as ammonia, nitrates, lead, and chlorides, etc., and includes a Florence flask, test tubes, pipettes, a graduated cc. measure, and a spirit lamp, etc. The bag only measures 11 in. by 4½ in. by 5 in., and is very light and portable.

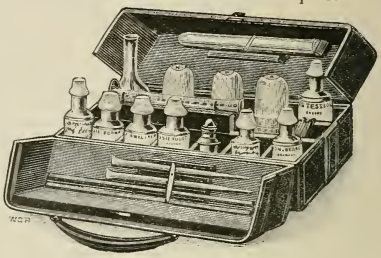


Fig. 76.

Spitting Cups.—These consist of a metal frame, into which a receptacle is placed for expectoration, in sick rooms and hospital wards. The receptacle can be removed and destroyed after use, thus affording comfort to the patient, and preventing the necessity of washing out as is the case with ordinary Spitting Cups. Messrs. Seabury and Johnson are the agents.

Artificial Antiseptic Ear Drum.—One of the most important inventions of the year in the way of medical appliances is the Artificial Antiseptic Ear Drum designed by Dr. Ward Cousins, and made the subject of a paper read by this gentleman at the Leeds Meeting of the British Medical Association. These drums consist of delicate little Welsh-hat shaped drums of a texture sufficiently close to act as a substitute for the natural drum in cases of perforation, or to protect the natural membrane when in a sensitive or inflamed condition. Antiseptically, they are of great service in conditions of the middle ear attended with suppuration. In cases of deafness through perforation they come as a special boon. An important feature is the ease

Fig. 77.

with which these drums may be inserted and removed. Messrs. Burroughs, Wellcome & Co., London, have devised an automatic machine which enables them to be manufactured at a very nominal cost. A combination white metal probe with nippers, designed by Dr. Ward Cousins, for inserting and removing the ear drums, is also supplied by the same firm.

Bandage Winder.—This is the production of Messrs. Reynolds and Branson, of 13, Briggate, Leeds, who can claim to have produced the cheapest appliance of the kind which has yet been introduced (2/6). It will roll any width of bandage up to four inches, and as it is simple and effective we trust that it will meet with a sale which will encourage the manufacturers to further efforts in a similar direction.

Enema.—The Clysopump Enema introduced by Messrs. Sumner and Co., should prove useful for auto-injections. It is very light and compact, and the cost is not greater than that of a good ball syringe.

Forceps' Case.—This is a little bag, just large enough to hold a pair of midwifery forceps and a catheter. The blades are separated by a chamois leather partition, and it serves to keep them bright when not in use, and renders them readily portable when required. It meets a very common requirement at a nominal cost (3/6). Sumner & Co., Liverpool, are the manufacturers.

Intra-Uterine Ointment Introducer.—We mentioned last year the very convenient method of treating gonorrhœa, and rectal troubles by the use of ointments, introduced by a pipe fitted to a collapsible tube. Dr. Duke has since suggested to Messrs. Sumner & Co., the manufacturers, a similar appliance for the application of ointments to the uterine cavity. Formulæ for the following ointments have been supplied by Dr. Duke: iodoform, boric acid, tannic acid, chloride of zinc (as escharotic), cocaine and morphia. We find that the treatment of gonorrhœa by ointments has been very extensively employed, and has given the greatest satisfaction. We think that very practical results in the treatment of many uterine disorders will follow from the use of this simple appliance.

Lint Roller.—This is a simple contrivance of the Liverpool Lint Co., for keeping lint in a convenient manner, so that it is always at hand and protected from the dust. The roll is contained in a tin case, which can be hung against the wall, the lint being pulled through a slot, which runs the whole length of the case. The "protective" lint contained in the case is well worthy of the notice of the profession, as it is coated on one side, so that the necessity of using oil silk is removed. This is both economical and saves labour.

The Dressing Bandage.—We illustrate here the Dressing-bandage recommended by Sir Joseph Lister and supplied by Mr. John Milne, of London. It has a soft elastic lining, and is prepared so that it forms a complete dressing for the wound. It is antiseptic and very absorbent.

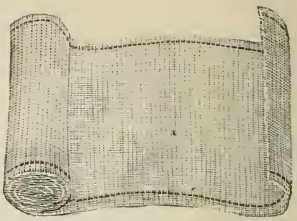
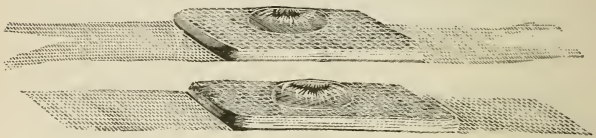


Fig. 78.

The Bandage Pads of the same maker are similar in construction to the above, but are particularly adapted for cases of accident.



Figs. 79, 80.

Wood Wool Dressings.—The advantages which may be fairly claimed for "Wood-wool" as a surgical dressing are its absorbent properties, its lightness, and cheapness. It also possesses some antiseptic power. It is now extensively used at the leading hospitals, and owing to improvements in the manufacturing appliances, it can be supplied at a very small price. The Sanitary Wood-Wool Company send us samples of the following dressings, made from this material: *Wood-wool Napkins.*—These are intended to take the place of the ordinary napkins used for infants; *Wood-wool Diapers.*—These are intended for ladies' use. Both are light, soft and antiseptic, and, costing no more than the ordinary expense of washing, are obviously preferable to the material ordinarily employed; *Wood-wool (Obstetric) Sheet.*—This is a thick pad intended to be placed under the patient during labour, instead of the ordinary mackintosh sheet. The discharges are then absorbed, instead of remaining upon the surface, and greater comfort to the patient results; *Wood-wool Wadding.*—This is impregnated with corrosive sublimate, and by causing rapid absorption of all discharges and maintaining the wound in an aseptic condition, it renders the changing of the dressings less frequently necessary, than by other means. Wood-wool is not only economical, but it possesses practical advantages of a high order, and can be confidently recommended.

Improved Suspensory Bandage (Ferris and Co., Bristol).—This bandage, when properly applied, is very comfortable, and is not liable

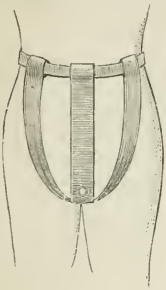


Fig. 81.

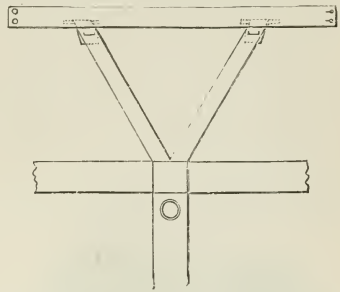


Fig. 82.

to slip on taking active exercise, is very simply constructed and considerably cheaper than the old form of suspender. The illustrations sufficiently describe it.

Sutures and Ligatures.—Mr John Milne has lately given great attention to the question of storing ligatures and sutures in a more convenient way than formerly. The sutures are on reels which lift out of the bottle of antiseptic oil with the stopper, and any desired length can be cut off without trouble or difficulty. Each bottle contains three reels of distinct sizes. For *ligatures* a different method is adopted. They are put up in straight 12 inch lengths, suspended between fixed plugs. Each tube contains 50 of these of various sizes. Although the ligatures prepared with the chromic and sulphurous acid solutions are much employed, the original carbolized ones are still the most largely used. Until Mr. Milne introduced his octagon reel fitted receptacles in 1876, there had never been an attempt to make the use of such ligatures agreeable to the surgeon. In these improved receptacles the tangled oil laden skein is abolished, the reel fitted octagon is improved upon, and the surgeon has a "ready for use" ligature at hand the moment it is required. The ligatures being preserved in straight lengths, there is an absence of the objectionable splitting and cracking of the threads and consequently a great saving in expense, there being no waste.

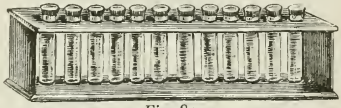


Fig. 83.

The Ambulance Stock Box is a convenient arrangement for keeping all antiseptic dressings, ligatures, etc., ready for immediate use in case of accident, and for the ordinary use of the practitioner. This is also the production of Mr. John Milne.

Salufer Wool.—This new Antiseptic is described in our pharmacy article. Messrs. Reynolds and Branson, of Leeds, have introduced a wool impregnated with this salt, which has proved a valuable dressing in a large number of cases treated at the Leeds Infirmary.

The Vaporarium.—For the administration of local or general vapour baths, it would be impossible to find a more simple or effective appliance than this. It is practically a cover made in three sizes : (1,) for a single limb ; (2,) For both limbs or thorax and abdomen ; (3,) For the whole body. This cover consists of two copper plates, with a cavity between, which is filled with boiling water after it is placed in position over the part of the body it is desired to affect. The result is that the hot air generated by the heat of the cover, brings the moisture of a wet flannel (enclosed within the apparatus), to a state of vapour, and this hot vapour is retained in contact with the part for any time that may be necessary. The apparatus will maintain its heat for over an hour without refilling, and requires no attention. When the process has been continued long enough, the water is allowed to flow away by means of a pipe at the bottom of the cover into a can placed beside the bed. The value of the local vapour bath in the treatment of joint diseases, was called attention to by Dr. Macartney in 1838, but owing to the very clumsy appliances which have hitherto been used, it has been hardly an available method of treatment outside the public bathing establishment. The same may be said of the general vapour bath which has always been regarded as a very troublesome process. It was in order to meet the difficulties attendant upon exciting free perspiration in patients confined to their beds, that Dr. Percy Wilde was induced to give attention to some better means of producing it. In cases of rheumatic fever, he claims, that heart complications may be almost completely avoided if active perspiration is regularly excited three or four times a day at the onset, and twice daily afterwards. He finds that active sweating followed by

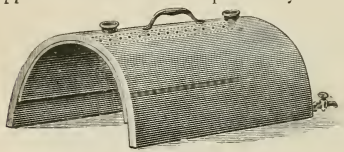


Fig. 84.

tepid sponging with acidulated water, instead of weakening the patient makes convalescence more rapid, and he insists that even when the joint symptoms have abated free perspiration should continue to be excited every day, until the patient ceases to perspire in the intervals between the vapour baths. By this method recurrence is avoided, and the patient will most often enjoy better health after the attack of rheumatic fever than before. The difficulty of using vapour baths or packs for the rheumatic fever patients, to whom every movement is painful, is removed by this simple appliance ; and at a time when treatment in the best London hospitals gives a percentage of 70 per cent of heart complications after rheumatic fever, this treatment, which has common sense grounds to recommend it, deserves a careful trial at the hands of the profession. Messrs. Llewellins & James of Bristol are the manufacturers and patentees, which are not very costly.

Ammonium Chloride Inhalers.—Two recently invented forms of Inhaler have been submitted for our inspection :—*The Simplex Inhaler* (Edgeworth's Patent) by Messrs. Ferris and Company. It consists of two bottles, (Fig.) one (*A*) containing Acid, and the

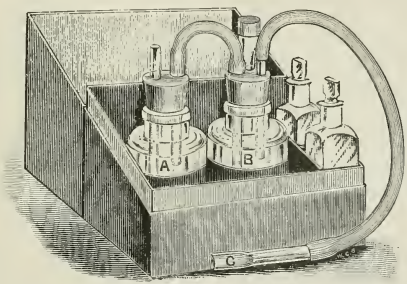


Fig. 85.

other (*B*) Ammoniated Water. On drawing air through the apparatus by means of the long tube (*C*) acid vapour is drawn through the ammoniated water, and takes up only as much ammonia as is necessary to form ammonium chloride.

Buxton's Inhaler is the most uncomplicated inhaler for chloride of ammonium we have ever seen. There is no india-rubber tubing used in its construction. The prepared sponges are dipped in their respective solutions of acid and ammonia,

placed *in situ* as shown in the figure, and on inspiring the fumes from each receiver come into contact, chloride of ammonium being formed, and made to bubble through the water in the bottle before reaching the mouth.

In both of these Inhalers the fumes are neutral, perfectly unirritating and in large volume, and should be taken deep into the lungs, and not smoked like a pipe, unless they are wanted for throat affections, or to pass up the Eustachian tube to the middle ear, or in post nasal catarrh or rhinitis.

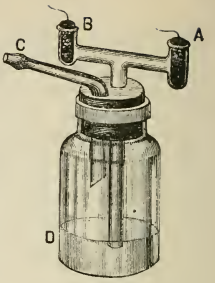


Fig. 86.

Chloride of Ammonium Spray.—Messrs. Lynch & Co., Aldersgate Street, London, have introduced a chloride of ammonium spray, by

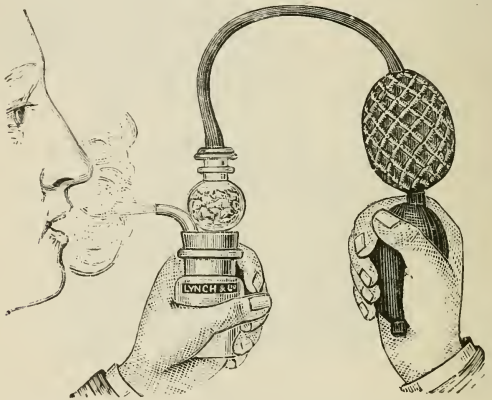


Fig. 87.

means of which the vapour can be applied to any part the physician may desire, just as in the case of the ordinary spray. It would be difficult to devise a more simple or practical appliance.

Menthol Inhaler.—Messrs. Burroughs, Wellcome & Co. send us an ingenious little instrument introduced by Dr. Macnaughton Jones, for the inhalation of menthol by the nose or mouth. Its great advantage is, that it can be carried in the pocket and used at any moment by the

patient. The value of menthol as an inhalation formed the subject of a recent communication to the Medical Press (Jan. 9th, 1890), by Dr. Lennox Browne, who says, "I have employed it for the last three or four years with the greatest success, for relief of the pain and distress occasioned by phthisical and other ulcerations of the throat and larynx. In a case of cancerous ulceration of the tonsil, floor of the mouth, and root of the tongue, when cocaine caused much discomfort, increasing the salivation characteristic of the disease rather than tending to give relief to surface pain, menthol afforded much relief from pain and possessed marked advantages over cocaine in this instance." He says, further, "I have also employed menthol with advantage in solution as a spray or brush application in diphtheria. For all forms of nasal disease, causing obstruction to the natural breath-way, I prescribe the menthol inhaler to the extent of hundreds per annum. By its use, when the nasal discharge is excessive it is checked, when deficient and thickened, as in hypertrophic rhinitis, its healthy character is restored, and when arrested, inspissated and malodorous, as in atrophic rhinitis, fluidity is promoted and the foul smell corrected." Dr. Lennox Browne recommends the employment of menthol vapour mingled with steam in cases of laryngeal consumption. A very satisfactory apparatus for this purpose is Codman and Shurtleff's Atomiser. With this instrument, two separate glass tubes are supplied, one for conducting the medicated steam to the throat and respiratory tract, and another suitable for conducting the vapour to the membranes of the nasal cavities. The inhaler will be readily understood from the illustrations. There are two nasal pieces which fit conveniently into the nostrils, and these are connected with a glass tube which is filled with an absorbent medium retained by a gauze diaphragm at the open end; on this the menthol solution can be dropped.

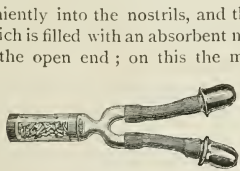


Fig. 88.

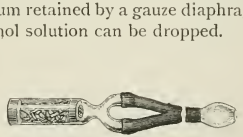
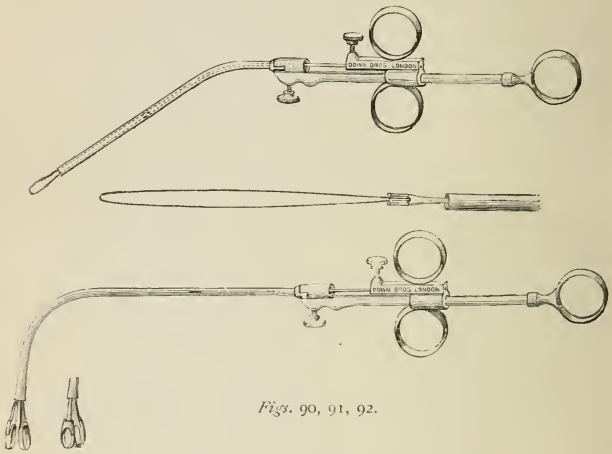


Fig. 89.

If the inhaler is required for oral use, the forked indiarubber tube with mouthpiece may be obtained and attached *(Fig. 89)*. Included in the box is also a thick camel-hair brush for the direct application of the menthol solution to the membranes when desirable. The same appliance might be used for the inhalation of a weak solution of ammonia, which frequently proves of great benefit in relaxed and catarrhal conditions of the vocal cords.

New Nasal Snare and Laryngeal Curette.—This instrument has been named after Professor Krause of Berlin, and has been introduced here by Mr. Charters J. Symonds. It appears to be an exceedingly handy and workmanlike instrument, combining power with lightness and ease of manipulation. The special advantage claimed for the Snare is the method of attaching the wires. It is merely necessary to protrude the stilette through the end of the cannula, and attach a short wire loop as shown in the illustration.



Figs. 90, 91, 92.

The Laryngeal Curettes, which fit into the same handle, are of two forms: opening laterally and antero-posteriorly, and seem to combine the qualities of lightness and strength in a remarkable degree, and would be found very useful in removing tuberculous infiltrations. The instrument has been made for Mr. Symonds by Down Bros., of 3 and 4, St. Thomas's Street, London, S.E.

Feeding Bottle.—In these days of scientific accuracy in all matters relating to the management and treatment of infants and invalids, we hardly like to leave such an important question as the proper temperature of the infant's food to the judgment of the nurse. Nor is it necessary that we shall do so, since Messrs. Burroughs, Wellcome and Co. have introduced a feeding bottle at a trivial cost, which is provided

with a thermometer let into the glass, which accurately denotes the proper temperature at which the food should be given. It is only necessary to call the attention of physicians to this simple appliance for its value to be recognized.

The Patent Pocket Galvanometer. -This must be considered one of the most practical inventions of the year, and will prove a very great assistance to every physician or surgeon who makes use of electricity. The Galvanometer, introduced by Messrs. King, Mendham & Co., is the size of an ordinary watch, and can as conveniently be carried in the pocket. With its aid it is possible to measure, instantly, the exact amount of electricity which is being delivered from any battery. The small cost at which this instrument can be obtained should cause it to be largely used.

Skin Soap.—This soap has been produced by Mr. Perry, of Hagley Road, Birmingham, to meet the requirements laid down by dermatologists in respect to the composition of soaps which may be safely applied to a delicate or irritable skin. It must be free from uncombined alkali, or traces of resin, and it should contain a certain proportion of free unsaponified oil. This soap fulfils all these requirements, and may be safely recommended by physicians in preference to a large number of inferior soaps, which owe their reputation rather to reiterated advertisement than to the fact that they meet the conditions which all physicians are agreed in considering to be essential to the preservation of the skin.

Ozonized Toilet Vinegar.—This preparation is not used as frequently in the sick room, as it would be, if physicians appreciated the great comfort a bedridden or fever patient derives from having the body sponged over with a little tepid water in which some of this is dissolved. It is not only refreshing, but it gives tone to the skin, and for this reason is particularly useful in rheumatic cases. Sumner and Co., of Liverpool, are the manufacturers.

Ung. Capsici (Sumner & Co.).—This appears to us to be almost identical with an ointment which we have had manufactured for our own use for many years. Messrs. Sumner & Co. recommend it as an excellent remedy for acute and chronic forms of rheumatism. We think from a prolonged and frequent experience, that it is in muscular rheumatism that it will be found of the greatest use, although it will sometimes give relief to rheumatism affecting the fibrous structures of the joints, where there is no deposit or effusion. But another use may be found for it—Capsicum ointment is the best remedy we know for chilblains in their early stage.

PROGRESS OF PHARMACY.

Antacid Lozenges.—Messrs. Sumner and Co., have manufactured in the form of a lozenge the following prescription of Sir William Roberts for acid dyspepsia: carbonate of calcium, $3\frac{1}{2}$ grains; carbonate of magnesia, $2\frac{1}{2}$ grains; chloride of sodium, 1 grain. This has the neutralizing power of 10 grains of the carbonate of soda.

Compound Sulphur Lozenges, another production of the same firm.—Sir Alfred Garrod has recently advised the continued use of such lozenges for the treatment of chronic rheumatism, rheumatoid arthritis and skin diseases. They are useful also, when there is venous engorgement of the abdominal viscera with piles. Each contains 5 grains of sulphur and 1 grain of cream of tartar.

Albuminate of Iron (De Groot).—We have received a sample of this preparation of iron from Messrs. T. Christy and Co. It is a favourite form of administering iron in Holland, Belgium, Sweden and Norway, and we think will be extensively used in this country. The great drawback to the use of iron compounds in medicine is the hitherto extreme difficulty of finding a preparation that could be readily absorbed. The dose is one teaspoonful, four or five times a day.

St. Marco Lithia Water is bottled at the Springs in Tuscany. It contains naturally carbonic acid gas, and in addition to carbonate of lithia, small quantities of magnesia and iron. It forms a pleasant table water in the treatment of lithiasis.

Pil. Cathartic Parv.—Messrs. Sumner & Co., of Liverpool, have produced a veritable *multum in parvo* in this little one grain pill. It contains aloin, gr. $\frac{1}{10}$; podophyllin, gr. $\frac{1}{4}$; ext hyoscyam., $\frac{1}{20}$; jalap, gr. $\frac{1}{10}$; ext. nux vom., gr. $\frac{1}{20}$; capsicum, gr. $\frac{1}{20}$. We have frequently called attention to the unnecessary size in which pills are made. Among our samples this year, we have a pill containing $\frac{1}{100}$ gr. of arsenious acid, made up to 3 grains; and its makers expect us to consider this among improvements in pharmacy. A large proportion of people find pills difficult to swallow, and there are very few which need exceed 2 grains in size. Messrs. Sumner have shown what can be done towards reducing the size of a very active cathartic pill.

Cordials.—Messrs. Christy & Co. have submitted for our investigation samples of their "Cordials." They are most pleasing preparations. We have found the Kola cordial an efficacious tonic and pick-me-up. The remarkable stimulating properties of the kola nut are becoming more widely recognized. Kolatina and kola chocolate will be found less bilious and more refreshing than cocoa.

Hypodermic Injections.—A neat pocket case containing six bottles of various hypodermic injections ready for immediate use, for three shillings, is a practical novelty worthy of notice. Messrs. Sumner & Co., the manufacturers, claim that these solutions contain neither acids nor alcohol, that they are of definite strength, and standardised up to the amount of real alkaloid contained in each.

The Concentrated Liquors recently introduced by Messrs. Battley and Watts will be found most useful by medical practitioners who dispense their own medicines: and we cannot but think that the favourable reception they have already met with is sufficient evidence of their efficacy. We would especially recommend the liq. cinch. cord. as a reliable preparation of cinchona bark, which can be tolerated in many cases in which sulphate of quinine produces irritation and nausea. One fluid drachm is equal to one ounce of calisaya bark, or one pint of infusion, or five fluid ounces of the pharmacopœal tincture of cinchona.

Glycerine Suppositories for Constipation.—The glycerine suppositories which have been manufactured for the treatment of constipation have proved very disappointing in practice, the reason being that when made sufficiently firmly to be introduced through the sphincter, their melting point is considerably above the heat of the body, and they dissolve so slowly that their effect is not produced. We have received many samples of these during the year, but we have rejected them all because when placed in water at a temperature of 99° F., they remained undissolved after thirty minutes. Messrs. Burroughs, Wellcome & Co. appear to have solved the problem by producing a hollow cone of cacao butter filled with liquid glycerine, so that the necessary firmness is obtained without the aid of gelatine; and as the cacao butter melts at the temperature of the body the mucous membrane is speedily exposed to the action of the glycerine. It is also claimed that these do not cause any smarting, which sometimes happens when the mucous membrane is very sensitive.

Schieffelin's Soluble Coated Pills present many advantages over the ordinary more or less insoluble white coated pills. The coating is air proof; one never finds that their Blaud's pills have undergone oxidation and become practically inert from keeping. We have used Messrs. Schieffelin's pills extensively, and have found them most satisfactory.

Sol. Calcis Iodinata (Sumner & Co., Liverpool).—This is intended to take the place of iodide of potassium, and is less expensive. The iodine appears to be in a much looser state of combination than in the iodide, so that its action will probably be more rapidly induced,

It forms an elegant preparation in combination with liq. hydrarg. perchlor. for the treatment of syphilis. It might also be used as an application, to be rubbed into enlarged glands to promote their absorption.

Apomorphine Chocolate Tablets.—A most useful preparation of Apomorphine introduced by Messrs. Ferris and Co., of Bristol. They are supplied in three strengths, containing $\frac{1}{4}$ grain, $\frac{1}{10}$ grain, and $\frac{1}{25}$ grain, respectively, of apomorphine. It is impossible to find a more palatable form of a reliable emetic than the strongest of these tablets.

Cascara Sagrada.—We alluded to four specimens of improved methods of administering this drug last year, and would further direct attention to Mr. W. E. Sacker's cascara sagrada aperient fruit lozenges. They are decidedly palatable. The dose for a child is half to one lozenge, for adults one to three. The tasteless compressed pellets of cascara sagrada prepared by this firm are equally convenient but less pleasing for children.

Iodic-Hydrarg is the name given to a new antiseptic sent us by Messrs. Burroughs, Wellcome & Co. It is undoubtedly a much more powerful antiseptic and germicide than corrosive sublimate, and is far less poisonous. A solution of 1 in 1500 may safely be used in midwifery practice, although a solution of the same strength of corrosive sublimate would be dangerous. A solution of 1 in 300 to 500 may be used as a paint in cases of granular ophthalmiæ, or 1 in 7000 solution for an ordinary antiseptic eye-wash. Mixed with lanoline (1 in 1000) it is an efficient antiseptic dressing for wounds, and a somewhat stronger ointment will serve as one of the best applications for syphilitic sores and nodes. It is soluble in equal parts of water, and its ready portability gives it many advantages to the general practitioner as well as to the surgeon on the field. We have reason to think that this preparation in doses of $\frac{1}{500}$ to $\frac{1}{1000}$ gr. will prove of great value in cases of tonsilitis and ulcerated sore throat, and that its value in medicine will not be altogether confined to its use as an antiseptic.

Antiseptics.—Mr. W. E. Sacker (of Fenchurch St., London, E.C.), sends us some Antiseptic Pellets, each containing fifteen grains, which is stated to be sufficient to make two quarts of antiseptic solution. We are informed that this solution will not discolour instruments like the perchloride of mercury, but we are not told what the pellets are made of. We are not, therefore, in a position to offer an opinion concerning them.

Hydronaphthol.—This is a secondary compound of beta-naphthol and has been recommended as an efficient antiseptic by many eminent surgeons on account of its being neither poisonous, corrosive, or in the solution required for its antiseptic use, irritant. It is also odour-

less, and, therefore, when it acts as a deodorant we can be sure that the products of decomposition are not merely disguised. Messrs. Seabury and Johnson supply it in the form of a soft crystalline grayish powder, or compressed in the form of tablets. They also supply a large number of surgical dressings in which this is the antiseptic agent employed. A valuable paper on this agent giving the result of very careful experiment, by Dr. Alexander Edington, appeared in the "Brit. Med. Jour.," May 11th, 1889.

Salufer.—This is the silico-fluoride of sodium, a non-toxic antiseptic, which Mr. Mayo Robson has found so valuable in the cases recorded in a recent issue of the "Brit. Med. Jour.," an account of which will be found in another portion of the work. Messrs. Reynolds and Branson, of Leeds, send us some compressed cubes of this salt, each of which is sufficient to make a quart of antiseptic solution, etc. Salufer bids fair to hold a very high place among antiseptics, because it is both non-poisonous and non-irritating, and Mr. Mayo Robson states that it is the best deodorant with which he is acquainted. The same firm also supply Salufer Wool, which is a cheap, inexpensive, and efficient antiseptic dressing.

Sulphur Candles.—This is a production of Messrs. Seabury and Johnson for fumigating rooms after infectious diseases. Each candle will burn for two hours, and affords a very safe and convenient method of fumigation.

Hydronaphthol Pastiles.—The same firm have produced a combination of "Hydronaphthol," with fragrant gums and perfectly harmless materials to promote combustion. Each pastille will burn for about thirty minutes, and will not only deodorise the room in which it is burned, but will drive out flies and other insect pests. The hydronaphthol is volatilized by the heat and re-crystallizes in air, being deposited on walls and draperies, whence it is subsequently taken up by the humidity of the atmosphere, thus furnishing lasting sources of disinfection.

Antiseptic Sublimate Powders.—Messrs. Ferris and Co., of Bristol, send us a box of little tubes, each containing sufficient corrosive sublimate, coloured with cochineal, to make a pint of antiseptic fluid. This will prove a useful addition to the surgical bag.

Eucalyptus Disinfectant.—We have frequently called attention to the great value of eucalyptus as a disinfectant. Its ready volatility enables it to be diffused through the air of a room with great facility, and is pleasant both to the patient and the attendants. In cases of diphtheria and fever it is particularly useful, not only to prevent infection, but it undoubtedly exercises a beneficial effect upon the

disease. Messrs. Tucker & Co. (51, Paddington Street, London), have introduced a "Eucalyptus disinfectant," which should be a very convenient method of employing it.

Icthyol.—A solution (5j to 3j) of this substance, which is now so much used as an application in erysipelas and eczema, has been sent us by Messrs. Sumner and Co. It is a most useful form in which to stock the drug for general use.

Nitrite of Amyl Inhalant.—(Sumner and Co.) This is another very convenient addition to our resources, recommended by Dr. Glynn, of Liverpool. It consists of nitrite of amyl, mixed with vaseline, which appears to have the power of holding the nitrite to a wonderful extent. Used like a smelling bottle, it is a very handy thing to have at hand, both in the consulting room of the practitioner and the dentist, for the latter because nothing will so rapidly remove the after effects of "gas" as a slight inhalation of the nitrite of amyl.

Cocaine.—Messrs. Sumner and Co. have produced a cocaine cone, like those used for menthol, but consisting of cacao-butter with 4 per cent. of cocaine. It is intended to be gently rubbed over the skin until sufficient has been melted to exercise a sedative effect; there is no doubt that this will prove of distinct service by the great convenience and readiness with which the application may be made.

Messrs. Reynolds and Branson (who also manufacture a similar cone of a strength of 2 per cent.) send us a sample of *Cocaine Wedges*. These are intended to be inserted in the cervix uteri to mitigate pain during labour. They are made of cacao-butter, rendered antiseptic by boric acid, and each contains one grain of cocaine. They were made at the suggestion of Mr. Wm. Hall, late lecturer on obstetrics at the Leeds School of Medicine, and we must compliment the manufacturers on the way in which the suggestion has been carried out.

Cocaine and Papaine Tablets.—(Christy). This combination of cocaine and papaine is very useful in all ulcerated and painful conditions of the throat. They are also of service in certain forms of dyspepsia.

Cocaine Pastiles (Sumner and Co.)—These contain $\frac{1}{3}$ grain of cocaine in each, and being made with glycerine the remedy is retained longer in contact with the throat. We think that a similar pastile strongly acidulated with lemon juice would be of great value in many forms of relaxed throat.

Copper Test for Urine.—The copper test for sugar in urine recommended by Sir Wm. Roberts is the most simple and reliable method yet designed. Messrs. Sumner and Co. have sent us some of the solution, and it has given most satisfactory results.

DIETETIC PREPARATIONS.

Diastin.—All physicians have recognized the value of malt as a digestive agent, and the power it possesses of enabling the consumptive or dyspeptic patient to assimilate starchy foods. For some years various extracts of malt have been brought forward which, while undoubtedly possessing its diastatic properties, have from their treacle-like consistence been very unpalatable to the majority of patients. Mr. George Gunn (Victoria Mills, Bath), has succeeded in producing a fine powder from malted cereals, which causes the digestion of starch with very marked rapidity. A small quantity added to a starch jelly rendered it immediately fluid, the starch being converted into dextrin. The powder can be mixed with any beverage, or eaten with bread and butter, and is decidedly palatable. We must regard this preparation as a discovery of immense importance in the treatment of that wide class of diseases which depend upon defective assimilation of food, and in which the appetite is capricious. We have been able to make careful trials of its practical utility, and the gain in weight of the patients, without any other addition to the ordinary food, has been very remarkable.

Gravina.—This is the production of Fredk. King & Co., 26, Waring street, Belfast, the proprietors of Edwards' Desiccated Soup, which we have favourably mentioned in previous editions of the "Annual." It can be used for making gravy or gravy soup, and both are excellent in flavour. There is no doubt that this preparation contains a large amount of nutriment and is very economical.

Rennet Powder.—(Sacker) This is excellent for making Devonshire junkets. It is perfectly free from colour or smell. Each powder is sufficient for the preparation of one pint of milk.

Nutrient Suppositories.—These are a very decided improvement in the method of rectal alimentation. They have an outer casing of cacao-butter, which renders them easy of introduction but which is readily soluble at the temperature of the body, and they contain fresh extract of meat combined with peptonized "Angell's Food," about sixty grains in all. Messrs. Sumner & Co. claim that they are readily assimilated, and never cause rectal intolerance. These points are easily determinable, and they deserve a very careful trial at the hands of the profession. We think that they will be found to meet a difficulty which has not previously been overcome in respect to the administration of food by the rectum.

Cadbury's Cocoa and Chocolate.—We have carefully examined a number of the products of this firm with a special view to the presence of potash, which is largely used to add to the solubility of

many of the cocoa essences at present sold. The results show that Messrs. Cadbury supply an absolutely pure cocoa of the highest quality, and that the great solubility of their cocoa essence depends upon the removal of the superfluous fat from the bean, which renders it a light, refreshing, and digestible beverage. The name "Cadbury" on any packet of cocoa or chocolate is a guarantee of purity, and practitioners will do well to remember this when recommending cocoa as a beverage and a food for invalids.

Frame Food.—We have heard a great deal of late years about the value of whole-meal bread, because of the large amount of phosphates which exist in the external layer of the seed; but while this is true from a chemical point of view, its precise value will depend upon the physiological power possessed by the individual to digest this portion of the wheat. It is in those cases where these important salts are most needed that this power is most usually wanting. The main idea of the introducers of frame food appears to be to prepare that portion of the wheat in a form which will render it easy of assimilation by the weakest stomach. The food contains 21·40 per cent. of albuminoids; 34·90 of dextrin and sugar; 13 per cent. of starch; and about 20 per cent. of phosphates, phosphoric acid, iron, and other organic matter. It is pleasant to the taste and very digestible, and compares most favourably with the many starchy compounds which are sold as foods for invalids.

Santha.—There is no beverage so universally loved as tea; but however skilfully the infusion may be made, it contains an amount of tannin, which has an appreciable effect in retarding digestion; and its too frequent use is one of the most frequent causes of some forms of dyspepsia. Efforts have recently been made to enable us to enjoy all the stimulating and refreshing properties of the tea, without the prejudicial effects due to the above cause. This has been effected by neutralizing the tannin and preparing an extract of tea in the form of a powder, to which the name Santha has been given. It will be a great boon to many invalids, to whom it may be recommended when tea has been forbidden. The agents are Barclay and Sons, Limited, Farringdon Street, E.C.

Santa Rosa Port.—Those who do not care for wines of the Claret class, and yet find Port too "heavy" for ordinary consumption, this new Californian wine, introduced by Messrs. Pearce & Co., Mark Lane, is likely to be much appreciated. In flavour it has many of the ordinary characteristics of a light fruity port, but its alcoholic strength is under 30° proof spirit. It is made from the muscatel and zinfandel grapes, and is a fresh, invigorating, and wholesome beverage, which can be safely recommended for the use of invalids and convalescents.

SANITARY APPLIANCES.

One of the most satisfactory features in connection with the advance of modern sanitation is, that it is attracting the attention of skilled and competent engineers, who are able from careful training and long experience, to bring forward really useful and practical improvements. We mention below two or three special manufactures out of many others to which our attention has been called by the firms interested, since our article on sanitation, appearing in the earlier pages of the "Annual," has been in print; and we are pleased to find so much active and scientific interest awakened in this most important subject. Amongst others is the system of sanitation, with cast iron pipes and manholes, as invented by Mr. W. D. Scott Moncrieff, M.I.M.E., and carried out by the North British Plumbing Co., which aims at adopting the principles of the American System of sanitation to house drainage in England. The principle appears to be sound in theory and workable in practice; and, although it may not replace the present system of well-constructed brick manholes in every place, it will form a useful and reliable system for adoption in special instances.

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Fig. 93.

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Life Assurance.

THE MEDICAL EXAMINATION.

Nowadays all first class offices rightly expect a tendency to scientific precision in the methods of conducting an examination for Life Assurance, and these examinations are necessarily much more comprehensive and more searching than, till recently, were regarded as sufficient for the purpose. They require something more than an accurate investigation of the physical condition, and of the family and personal history of the applicant, for having obtained these data, much depends on their correct interpretation, which must be left to some extent to the judgment of the examining physician, and to do justice, both to the Assuring Office and to the Assurer, is often a matter requiring his most careful consideration; we hope that this article may be of assistance to those medical practitioners who have no time to consult the larger works on the subject. It has been our object to make the article very brief and essentially practical. We have therefore, as far as possible, avoided discussion as to how different results have been arrived at, and must refer our readers to the list of authorities on Life Assurance given at the end of the article for fuller information on these points.

In his lectures at Gresham College, Dr. Symes Thompson said truly that it is not a very easy matter to decide by simply one personal visit and examination whether a person is likely to live ten, twenty, or fifty years, but that is a question that the Assurance doctor is called upon to decide every day of his life, and in a manner which often involves his office in great responsibilities; sometimes not limited to £1000, £2000, or even £100,000. For while in practice the patient lends all the assistance he can to his examining physician, calling attention to anything he believes amiss with his health, and laying stress on all his symptoms, the applicant for assurance naturally appears at his best, and, often unconsciously, rather tries to conceal any departure from health. The greatest care therefore must be exercised in making the physical examination and filling in the details in the forms supplied by the office.

But having done this much which involves an accurate appreciation of physical signs and symptoms, the physician must exercise no little tact in some cases in obtaining information regarding the habits

of the candidate, especially in reference to the consumption of alcohol. Habitual excess in alcoholic drinks is often concealed by some general and vague expression. The general appearance and bearing should be noted, and whether the real age corresponds with the apparent age ; a prematurely aged and worn appearance and early baldness indicate a tendency to early degeneration and shortening the expectation of life. In the words of Sieveking, we must "seize every indication of impaired vitality."

Having conducted the examination and obtained all the necessary information regarding the candidate, the physician has to decide whether the life is a first class life, and that there is no feature in the case that may be regarded as tending to shorten his normal expectancy of life. If however there is reason to believe that his life will be shortened, the assurer must be rated up accordingly. For instance, if the candidate is 30 years of age, and it is considered that on account of some bad feature his life will be shorter than the average healthy man's by 10 years, we find by looking at the table that the normal expectancy of life at 30 is 34 years, and that it is at 44 years of age we should expect him to live only 24 years, (*i.e.* 34 years less 10 years,) and therefore we should rate him up by adding 14 years to his life, making him pay the premium that a *healthy* man of 44 years would pay to cover the extra risk. It is a common mistake to simply add 10 years to the life in such a case, whereas we have shown 14 years should be added according to the tables given.

The great importance of taking the occupation into consideration of even perfectly healthy lives is sufficiently obvious from Table I., p. 619. Some Offices decline to accept the lives of male publicans, and great care is needed in accepting any person employed in bars, etc. The Sheffield knife-grinder is unassurable ; they very seldom live beyond the age of 35 : it is important to ascertain whether the grinding is wet or dry. There is no great danger in wet knife-grinding, the danger of knife-grinding being due to the fine particles of steel inhaled during the dry grinding process.

In certain industries the dangers vary in different departments. We recently visited the Worcester Porcelain works, and were struck with the advanced ages of the employés in the painting and decorating departments as compared with those in the more dusty pottery, and on inquiry were informed that workmen in the latter department seldom lived to old age.

Again, upholstering is more dangerous to life when the work is amongst mattress makers and those who use millpuff, than amongst those whose work is with the less dusty horsehair couches.

But there are other conditions in which the occupation becomes important, and in which the judgment of the examiner must take the place of statistical tables, viz.: when the life is not altogether sound in personal or family history. Thus a baker with a family history of phthisis or bronchitis would be a more risky life than a plumber or painter with the same family history, the personal histories being the same, although the occupation of painting and plumbing is on the average more dangerous to life than a baker's, for bakers are peculiarly liable to lung diseases from their exposure to sudden changes of temperature, and the dusty atmosphere in which they work. Lung weakness is therefore more likely to develop into actual disease in a baker than it would in a painter, whose chief danger is lead poisoning and gout, and in whom, conversely, a family history with kidney lesions would be more serious than the same in a baker.

The consideration of the relations of trade to the history of the individual has gained in importance since it has been found that invalid lives may, if properly rated up, be safely accepted. The first office to introduce invalid life assurance, The Clerical, Medical, and General, has had 25,000 persons insured with them, and of these 6000 were invalid lives, about 1 in 4 being then rated up as an invalid life, and yet the result of analysis shows that the invalid business has been a gain instead of a loss to the office. And if it is desirable for the office to accept invalid lives thus modified, it is of much greater importance for the invalid candidates to be accepted, and these are just the cases in which every examining physician must feel a difficulty in coming to a correct appreciation of the extra risk to be met by rating up.

Family History is of great importance in indicating the pathological tendencies of the case. It is the duty of the examiner not to accept the statements of the candidate without strict investigation of all doubtful points. Thus child-birth is frequently given as a cause of death, when further inquiry shows that death took place months after parturition from a totally different cause, or that the deceased relative had had lung disease for some time before the birth of the child, and to which the relative really succumbed. Again, inflammation or some other acute lung disease is often stated as the cause of death when our questions reveal that the disease was chronic and probably tubercular; on the other hand it may be found that the candidate has given consumption when the cause of death was acute inflammatory disease, or rheumatic fever when the real cause was pyæmia, or has in some way or other made his family or personal history tell against him unjustly.

The examiner should never be content with giving such vague terms as "dropsy" as a cause of death without stating, if possible, whether due to heart, liver, or kidney disease.

The urine should, if possible, be passed in the presence of the examiner to prevent fraud. There is rarely any difficulty in obtaining sufficient for our purpose. In every case it should be tested for albumen, and it is safer to examine for sugar, especially in candidates passed middle life, and when the specific gravity is high.

To estimate the expectancy of life in .

Albuminuria.—Albumen in the urine may be due to some temporary disease of the bladder or urethra. These cases should be deferred until the candidate has recovered from the affection.

All cases in which albuminuria exists in association with Bright's disease or heart disease, as shown by other features in the case, must be rejected, and the many points that the examiner must consider in dealing with any case of albuminuria are so excellently and clearly laid down by Dr. Pavy in his paper, read before the British Medical Association, at Leeds, in 1889, that we venture to quote his remarks *in extenso.*

"A careful survey of all the collateral circumstances is called for, and these are the points to which attention requires to be given: whether there is anything in the family or personal history suggestive of the existence of renal disease. It is known that Bright's disease occasionally runs in families. Is there a history of antecedent nephritis, gout, lead poisoning, or conditions that would lead to lardaceous disease? Is the age such as to favour the production of organic disease? Whilst simple functional derangements are common in early life, structural alteration becomes more common as a source of deviation from the ordinary state in proportion as age advances. Has there been the slightest evidence of œdema, and is there any unnatural pallor? The question of persistent headache, vertigo, and any kind of fit must be inquired into? Is there impaired or disordered vision? If so, by ophthalmoscopic examination it must be ascertained whether the changes in the retina and optic disc belonging to Bright's disease are discernible.

"Does the examination of the cardio-vascular system reveal by such signs as hardness of pulse, thickened artery, undue cardiac impulse, accentuation of aortic second sound, and reduplication of the first sound at the apex, the existence of high arterial tension? Has there been anything of the nature of albuminuria, dyspnœa, or palpitation?

"A frequent feature of renal disease is anorexia, amounting, it may

be to actual aversion to food, especially meat, and there may be with it nausea, vomiting, and a disposition to diarrhœa. Another feature is a disposition to inflammation of the serous membranes ; but should these conditions exist, the case is scarcely likely to allow a doubt to prevail as to the manner it should be dealt with in relation to life assurance.

"The state of the urine beyond the presence of albumen will require attention."

But there are cases in which, without any apparent departure from perfect health, albuminuria is found, and which we may term simple albuminuria.

For fuller information on the question of simple albuminuria we must refer our readers to Dr. Saundby's article on albuminuria in the "Medical Annual" for 1889, and to Dr. Pavy's paper and the report of the discussion which followed.

Cases of uncomplicated albuminuria may be classified thus :—

A. Transient albuminuria may be due to such causes as : (1,) Forced exercise, as occurred in the case of Weston, the pedestrian, in one of his great feats ; (2,) Severe mental strain, as in overworked candidates for civil service appointments ; (3,) Cold baths ; (4,) Ingestion of large quantities of albuminous food, *e.g.*, eggs. These cases Dr. Pavy regards as normal.

B. Persistent albuminuria : (1,) Cases in which traces only of albumen are observed ; (2,) Cases in which a notable amount of albumen exists and is always present ; (3,) Cyclic albuminuria in which a notable amount of albumen is found at one period of the twenty-four hours, and none at another.

The first of these three groups, correctly diagnosed, Dr. Pavy does not consider invalidates the prospects of the case.

With regard to the second group, the risk is invariably increased, and only those that have been under observation for a considerable time are insurable. Dr. Thos. Fraser advises the rejection of all cases in which the precipitated albumen exceeds one-eighth of the urine after it has stood for twenty-four hours.

The third group may be regarded favourably, but requires an additional premium.

The general opinion of experts is well expressed by Dr. W. T. Gairdner's expression that albuminuria is a "danger signal" in life assurance.

In any case of persistent albuminuria, if the amount of urine passed daily exceeds 60 ounces, reject. The specific gravity should be taken of the twenty-four hours' urine. Albuminuria is least significant when the specific gravity is high, excluding, of course, the consideration of

sugar. (Tyson.) Low specific gravity is suspicious of organic renal disease. Specific gravity 1010 is the lowest density consistent with health.

The urine must be examined microscopically in all doubtful cases; the presence of casts involves rejection.

Cancer is generally considered as being next to phthisis in importance as regards transmitted tendency, and a family history in which cancer has caused more than one death must be regarded with suspicion, the more so when a phthisical and cancerous taint appears conjointly.

Corpulency.—Excessive obesity decidedly calls for extra premium. "Sixteen people were rated up because they were too fat, and the average addition to their lives was six and a half years, and yet the experience showed that that rating was not sufficient to cover the office from loss." (Symes Thompson, "Gresham Lectures.")

Sieveking suggests about 25 per cent. extra rate for corpulency.

Tables showing the normal relations between height and weight are appended. One-fifth too much or too little may be disregarded; when the increased weight exceeds this *and is due to excessive fat*, extra premium. It is often associated with gout.

Ear (Discharge from).—The most important ear disease for the examiner to consider is otitis media and its complications. Any history of discharge from the ear must be regarded with suspicion and carefully investigated; under no circumstances should a candidate be accepted with acute inflammatory disease of the ear. Chronic discharge of pus is usually due to purulent catarrh of the tympanum, an acute and painful affection in the early stages. The pus having ulcerated through the tympanum, may continue to discharge for years. The degree of deafness is variable, but generally marked. Polypus is one of the most frequent complications in these cases; its presence, therefore, must not be lightly regarded; it may block up the meatus and prevent the pus discharging: the same remarks apply to the less frequently occurring aural exostoses. We have to dread most of all pyemia, meningitis, or cerebral abscess, due to caries of the temporal bone, and this is especially to be feared when the escape of pus is prevented. A patient, therefore, who has had a purulent discharge from the ear which has ceased may be less eligible than one in whom the discharge is still present. "The fact that even under the most favourable conditions such events are possible when there is a fistulous opening in the tympanic cavity, should induce caution with assurance offices in taking the lives of persons with this lesion at the ordinary premiums. It may be stated, subject to no

exception, that whenever exposed bone can be detected within the cavity of the tympanum, the subjects of this condition are always in a more or less perilous state." (Sir W. B. Dalby, "Quain's Dict. of Med.")

Gout requires most careful consideration, and the experience of life offices show that the usual rating up of 3 to 5 years is not sufficient. Dr. Symes Thompson points out that it was very well to add a small extra rating when well marked gout appeared, as in the old days; now when people inherit and do not acquire it as their fathers did before them, the rating must be much heavier. Numbers die from diseases traceable to gout, although they do not actually die of gout itself.

Dr. Garrod's hospital statistics show that at least 50 per cent. of gouty cases are due to heredity, and in private practice the percentage is still higher. It usually manifests itself between the ages of 25 and 40, but in inherited gout symptoms may appear much earlier in life.

Dr. Stillman is of opinion that when it manifests itself before 30 the life is a hazardous risk.

Heart Disease is not now regarded the barrier to life assurance it almost invariably was a few years ago. As Dr. Sutton says, a heart may have much morbid alteration in its structure, and yet it may go so easy that the patient works and enjoys life for many years. What right have we in such instances to say he has a diseased heart? He attended a young person for rheumatic fever and mitral affection, and the mitral bruit has continued for twenty years, yet she has been able to go about like ordinary people. What would have been the use of frightening that patient by considering her heart as diseased? Again, a middle aged man once consulted him about his heart, and told him what had led him to do so. One day, after hurrying to catch a train, he felt distressed about his heart, consequently he went to several medical men; they had all prescribed digitalis, yet there was no evidence of his heart working uneasily. He was able to do his work as a commercial traveller, to eat, and sleep, and feel comfortable, and there was no difficulty in his breathing. Therefore, he was told simply to take no medicine, and go on as usual. "How could I treat him for heart disease?" says Dr. Sutton, "there was a mitral bruit, but I could not treat the sound." (H. C. Sutton, "Lectures on Med. Pathology.") We have quoted Dr. Sutton's cases with his remarks on some cardiac lesions, somewhat *in extenso*, because medical practitioners so generally regard all cardiac bruits as essentially grave, and not unfrequently regard the intensity of the

bruit as a measure of the gravity of the lesion, and consequently many lives are most unfairly rejected or much too highly rated up. For there is no organ in the body which so completely adapts itself to adverse conditions as the heart. With a pulse regular in force and rhythm, and normal in tension, and where there are no symptoms indicating deficient compensation, the risks in many cases of heart lesion may be covered by small extra premiums. It is especially important to recollect that the weakness or strength of a murmur is no test of its gravity.

Physiological.—A *mitral bruit* is sometimes developed in a healthy heart temporarily from the excited action due to nervousness from the medical examination, and disappears entirely when the heart has quieted down. All cases of heart disease where there is evidence of deficient compensation and heart failure must of course be rejected.

Aortic regurgitation is liable to end in sudden death. It is always very risky.

Aortic constriction with complete compensatory hypertrophy is the least dangerous of all valvular lesions.

The most difficult of all heart diseases to detect with certainty is "*fatty heart*," and sudden death frequently occurs from this disease when there has been no previous suspicion of the existence of any cardiac lesion. Of course, when it is suspected, the life is uninsurable. It is beyond the scope of this short article to discuss the signs and symptoms, but it is of extreme importance that the condition should not be overlooked.

Hernia.—For a single hernia, provided the patient wears a proper truss, add 3 years. (Sieveking.) For double hernia it is usual to increase the extra rating, though it is doubtful whether double hernia is more risky than single. Age and occupation must be taken into consideration.

Insanity.—Speaking generally, acute insanity shortens life; chronic insanity does not. (Bucknill and Tuke.) With insanity in the family history, the age which the insane members attained to is important. Puerperal mania is not of great moment Where insanity and epilepsy occur together in the same family history, an extra premium must be charged. "Hereditary insane taint lessens life 20 per cent." (Stillman.)

Phthisis and Lung Diseases.—The nature and character of hereditary influence must be regarded from three aspects: (*a*,) The preceding generations; (*b*,) The collateral generation; (*c*,) The descendants of the individual. Now the great majority of candidates for insurance have reached the age of 30, that is, after they have passed the period of life (15 to 30 years) in which most consumptives

begin to show signs of the disease. And, therefore, a history of phthisis in a parent would, to a certain extent, lose weight if the individual himself was physically sound, and especially if he was born before the parent became consumptive. We must, however, beware of vague terms, as undoubtedly a large number of consumptives acquire the disease late in life between the ages of 50 and 80; these, however, are mainly due to health broken down from causes other than hereditary taint. Hereditary tendency to phthisis has been shown to be overrated as a rule.

The value of a phthisical tendency in descendants is even less than in preceding generations. The most important evidence in family history is that of collaterals, especially brothers and sisters, for it often indicates the critical period in which it is likely to develop, and which, if passed, places the candidate in a better position. Moreover, a phthisical taint often appears *de novo* in a family, the result of adverse influences, in the shape of invalid, aged, or alcoholic parents at the time of conception, want of nourishment, etc., etc. The following tables of Dr. Theodore Williams show that cases in which brothers and sisters only were phthisical, are 46 per cent. of all consumptives, a larger percentage than that of any other class of relations. It shows also that females are more likely to transmit the tendency than males, and that this difference between the inheritance of phthisis from fathers and mothers amounted to about 5 per cent.

Dr. Theodore Williams' analysis showed that of 484 phthisical patients, 10 had grand-parents affected, 10 had cousins affected, 10 had both parents affected, 48 had uncles and aunts affected, 43 had fathers affected, 67 had mothers affected, 72 had father or mother affected, 224 had brother or sister affected.

Thus phthisis in the mother gives rise to phthisis 5 per cent. oftener than phthisis in the father does; and phthisis in the brother or sister gives rise to phthisis 50 per cent. oftener than phthisis in the father.

The following rules, extracted from Moinet's work on "Life Insurance," and which are a modification of Sir Robert Christison's rules (published in 1867), summarise the points at issue as well as it is possible to do :—

(1,) One consumptive death in the immediate family of father, mother, brothers, and sisters. No positive personal objection. Fair average. No extra premium (*i.e.*, provided the proposer is some years above the age at which father or mother died young of phthisis; or is

NOTE.—If in either Class 1 or 2 the personal points are not favourable, an extra premium should be charged. In Class 1, with little consideration as to the one death from phthisis in the family, but simply from the present and past condition of the proposer's health. In Class 2, any unfavourable points in the proposer would increase the risk.

near the age of the father or mother at death, if they were advanced in years. Otherwise an extra premium).

(2,) Two consumptive deaths in a numerous family, one parent especially; father above 40; one brother or sister. Personal points favourable. Age above that at which brother or sister died. Fair average. No extra premium.

(3,) Two consumptive deaths among brothers or sisters; good personal history. Extra according to age, but should not be accepted unless at or above the age when they died, and personal points good.

(4,) Two consumptive deaths, as both parents; good personal points. Extra according to age, and ages of parents at death.

(5,) Three deaths or more from consumption, as one parent or two brothers or sisters; personal points good; not to be taken unless above critical period of family, and only with heavy extra; personal points not favourable, unassurable.

(6,) No deaths from phthisis in immediate family, but personal tendency to these diseases shown by bronchitis, hæmoptysis, narrow chest, general configuration. Extra premium.

(7,) No death from phthisis; one from suspicious cause; infant mortality of family great; survivors very young. Extra premium.

Symes Thompson considers that 3 to 5 years added to the life is adequate when the personal history is good, and says that, as a rule, the rating is excessive.

Other adverse influences are tropical birth, a close blood relationship, or great disparity of age between the parents.

Polypus (Aural). (See "Ear Disease.")

Rheumatism is inherited in about 50 per cent. of the cases. It is essentially a disease of early and middle life, occurring chiefly between the ages of 15 and 35; after that age the individual is practically safe if he has never had it. The chief danger lies in the heart complications, which are found in 50 per cent. of the cases, and is especially liable to occur in the young subject of rheumatism. "For one attack of rheumatic fever, even with no heart complication, add 7 to 10 years." (Sieveking.)

Stricture (Urethral) involves an additional premium. Broadly, the younger the candidate, the higher must be the rating up, as there is a greater risk of surgical kidney arising as a complication.

Health Insurance.—A new departure has recently been made in Insurance offices by the Health Insurance Corporation of London and the Sickness and Accident Association of Edinburgh. There are many additional difficulties in this form of insurance which are not so likely to be met with in ordinary life insurance; we refer more

especially to malingering. But the experience of these offices shows that the precautions adopted to prevent fraud have been sufficient, and they certainly supply a long felt want.

In examining a candidate for health insurance, we have to determine whether, from the individual and family history, he is especially liable to fall ill, and whether he is likely to continue in ill-health. One must bear in mind that many conditions of ill health may incapacitate a man for a time, and render him quite unfit for health insurance, which would not probably materially shorten his life. In ordinary insurance one has to consider whether there is anything about the insurer which makes it probable that *death* will occur too soon.

We cannot enter here into the question of infantile life assurance. Amongst the poor it is, however, almost a necessity; for them it means all the difference between a decent burial and the pain and ignominy which the respectable poor feel in applying to the parish. A great outcry is being made, most unjustly, against insuring infants' lives, but the statistics of the Royal Liver friendly society, the Prudential, and the Blackburn philanthropic burial society, three large and representative societies, show that the mortality amongst their insured infants is below the general average mortality at corresponding ages. Undoubtedly there are cases where children have been murdered for the sake of the insurance money, but resort to crime for a similar purpose is by no means unknown in adult assurance.

TABLE I.—INFLUENCE OF OCCUPATION.*

COMPARATIVE MORTALITY, AGE 25 TO 65, MAKING ALL AT SAME AGE = 1000.

Clergymen	556	Butchers	1170
Farmers and Gardeners ...	644	Plumbers and Painters ...	1202
Grocers	771	Cutlers	1309
Carpenters	820	Hairdressers	1327
Lawyers	842	Brewers	1361
Drapers	883	Cabdrivers	1482
Commercial Travellers ...	948	Chimney sweeps ...	1511
Bakers	958	Publicans	1521
Cabinet Makers ...	963	Potters	1742
Bricklayers, Masons, etc.	969	Coal Miners (Cornwall) ...	1839
Commercial Clerks ...	996	Hawkers	1879
Tailors	1051	General Labourers (London)	2020
Medical	1122	Hotel Servants ...	2205

* From tables of the Registrar General, 1885.

TABLES II. & III.—EXPECTANCY OF LIFE AT VARIOUS AGES.*

ASSURED LIVES.				NON-ASSURED LIVES.				AMERICAN RATES. †	
	Male.		Female.	Male.		Female.			
Age.	Y.	M.	Y. M.	Y.	M.	Y.	M.	Years.	Age.
10	50	3	48 2	47	7	49	9	48·72	10
12	48	9	46 7	46	0	48	2	47·44	12
14	47	0	45 1	44	3	46	0	46·16	14
16	45	4	43 8	42	7	44	10	44·85	16
18	43	7	42 3	41	0	43	3	43·53	18
20	42	1	40 10	39	5	41	8	42·20	20
22	40	7	39 5	37	11	40	2	40·85	22
24	39	2	38 0	36	5	38	9	39·49	24
26	37	8	36 10	35	0	37	3	38·11	26
28	36	2	35 8	33	6	35	10	36·73	28
30	34	8	34 6	32	1	34	5	35·33	30
32	33	3	33 4	30	9	33	0	33·92	32
34	31	9	32 1	29	4	31	7	32·50	34
36	30	3	30 10	28	0	30	3	31·07	36
38	28	10	29 6	26	7	28	10	29·62	38
40	27	5	28 3	25	4	27	6	28·18	40
42	25	11	26 11	24	0	26	1	26·72	42
44	24	6	25 8	22	9	24	9	25·27	44
46	23	1	24 4	21	5	23	5	23·80	46
48	21	8	23 0	20	2	22	0	22·36	48
50	20	4	21 7	18	11	20	8	20·91	50
52	18	11	20 3	17	9	19	4	19·49	52
54	17	7	18 10	10	6	18	0	18·09	54
56	16	4	17 6	15	4	16	8	16·72	56
58	15	1	16 2	14	3	15	5	15·39	58
60	14	5	15 6	13	8	14	10	14·09	60

* From Dr. Ogles' English Life Tables (1871-80).

† From the "New York Statute Insurance Laws." (Barnes.)

TABLE IV.—Expectation of Life.

Actuaries' Healthy Males Experience (1869). Known as H.M. Tables.

Completed Age.	Years.	Completed Age.	Years.	Completed Age.	Years.	Completed Age.	Years.
0	57·64	31	34·04	54	17·81	77	5·85
5	53·83	32	33·30	55	17·14	78	5·48
10	49·89	33	32·59	56	16·53	79	5·22
11	49·38	34	31·86	57	15·90	80	4·93
12	48·38	35	31·15	58	15·26	81	4·61
13	47·50	36	30·41	59	14·64	82	4·36
14	46·60	37	29·69	60	13·99	83	4·04
15	45·90	38	28·97	61	13·42	84	3·84
16	45·14	39	28·27	62	12·83	85	3·58
17	44·23	40	27·57	63	12·26	86	3·44
18	43·39	41	26·85	64	11·72	87	3·26
19	42·64	42	26·14	65	11·17	88	3·05
20	41·98	43	25·42	66	10·65	89	2·94
21	41·23	44	24·69	67	10·12	90	2·68
22	40·51	45	23·98	68	9·61	91	2·46
23	39·84	46	23·27	69	9·13	92	2·25
24	39·15	47	22·57	70	8·68	93	2·34
25	38·44	48	21·89	71	8·16	94	2·90
26	37·65	49	21·20	72	7·65	95	1·90
27	36·93	50	20·51	73	7·24	96	1·06
28	36·18	51	19·84	74	6·83	97	1·00
29	35·47	52	19·17	75	6·56	98	0·50
30	34·75	53	18·50	76	6·17	99	...

A Person who is to be Rated up 25 Per Cent.

If between 20 to 30 years of age, must have 10 years added to his life.

,,	,,	40 to 44	,,	,,	,,	7	,,	,,	,,
,,	,,	45 to 49	,,	,,	,,	6	,,	,,	,,
,,	,,	50 to 60	,,	,,	,,	5	,,	,,	,,

TABLE V.—Proportions between Height and Weight of Healthy Men. (Dr. Robertson.)

Height.	Model.	— W. One-fifth too little.	+ W. One-fifth too much.	Height.	Model.	— W. One-fifth too little.	+ W. One-fifth too much.
5'3	8'13	7'2	10'10	5'10	12'4	9'12	14'10
5'3½	9'2	7'4	11'0	5'10½	12'8	10'1	15'1
5'4	9'5	7'7	11'3	5'11	12'11	10'3	15'5
5'4½	9'8	7'9	11'7	5'11½	13'1	10'6	15'10
5'5	9'11	7'12	11'10	6'0	13'5	10'10	16'0
5'5	10'1	8'1	12'1	6'0½	13'9	10'13	16'5
5'6	10'4	8'3	12'5	6'1	13'13	11'2	16'10
5'6½	10'7	8'6	12'8	6'1½	14'3	11'5	17'1
5'7	10'10	8'8	12'12	6'2	14'7	11'9	17'5
5'7½	11'0	8'11	13'3	6'2½	14'11	11'12	17'10
5'8	11'3	9'0	13'6	6'3	15'1	12'1	18'1
5'8½	11'7	9'3	13'11	6'3½	15'5	12'4	18'6
5'9	11'10	9'5	14'1	6'4	15'9	12'7	18'11
5'9½	12'0	9'8	14'6				

TABLE VI.—Showing Normal Relations between the Chest Measurements (circumference just above the nipple level) and height.*

Height.		Model Weight.		Model Chest Measurement.
ft.	in.	st.	lbs.	inches.
5	3	8	8	34
5	2	8	10	35
5	3	8	13	35¾
5	4	9	5	36¼
5	5	9	11	37
5	6	10	4	37½
5	7	10	10	38
5	8	11	3	38½
5	9	11	10	39
5	10	12	4	39½
5	11	12	11	40¼
6	0	13	5	40¾

* Slightly altered from Allen's "Medical Examinations for Life Insurance."

THE NORMAL PULSE RATE. (Baker's "Physiology.")

During the first year...	...	...	130 to 115	a minute.
„ second „	...	...	115 to 100	„
„ third „	...	...	100 to 90	„
„ seventh „	...	...	90 to 85	„
„ fourteenth „	...	...	85 to 80	„
„ adult age „	...	...	80 to 70	„
„ old age „	...	...	70 to 60	„

The number of respirations in a healthy adult varies from fourteen to eighteen per minute. Any abnormal frequency in the pulse or respiratory rate, or any marked departure from the normal relation, frequency between pulse and respiration rate, must be regarded with suspicion. An intermittent pulse frequently indicates a gouty condition, especially in the absence of definite cardiac lesions.

TABLE VII.—SHOWING RESPIRATORY POWER OR VITAL CAPACITY.

Inspiration.	Expiration.
$1\frac{1}{2}$ inches, weak.	2 inches of the mercurial manometer.
2 „ ordinary.	$2\frac{1}{2}$ „ „ „ „
$2\frac{1}{2}$ „ strong.	$3\frac{1}{2}$ „ „ „ „
$3\frac{1}{2}$ „ very strong.	$4\frac{1}{2}$ „ „ „ „
$4\frac{1}{2}$ „ remarkable.	$5\frac{1}{2}$ „ „ „ „
$5\frac{1}{2}$ „ very remarkable.	7·0 „ „ „ „

REFERENCES.—Sieveking, "Medical Adviser in Life Assurance"; Stileman, "Life Insurance Examiner"; Allen, "Medical Examinations for Life Insurance"; Levan, "Medical Examinations for Life Insurance"; Thompson, "Life Assurance Primer"; Stillman, "Guide to Medical Examinations for Life Insurance"; Taylor, The "Medical Examiner in Life Insurance"; Pollock & Chisholm, "Medical Handbook of Life Assurance"; "Albuminuria and Life Insurance"; "Brit. Med. Jour.," Aug., 1889; Fraser, "Mem. on the Presence of Albumen in the Urine of Candidates for Life Assurance."

THE SELECTION OF A LIFE OFFICE.

It is necessary to exercise much care in the selection of a Life Office. Two mistakes are frequently made: One is that an office doing a large business must of necessity be a good one; and the other, that large funds are a sure indication of wealth. As a matter of fact, large offices have sometimes been most unsound, although at the same time most active in securing new business. Then, as to the funds, it should be thoroughly understood that it is the business of a Life Office to invest and accumulate the premiums received, in order to meet the claims under the policies as they arise. Consequently, a large Reserve or Accumulated Fund, considered by itself, is simply an indication in a Life Office that the liabilities on existing policies are correspondingly large.

All Companies are now required by Act of Parliament to lodge their Accounts and Valuation Statements with the Board of Trade. These are published yearly, and should be consulted. The information supplied by these Returns can only be fully appreciated, perhaps, by those who possess actuarial knowledge and training. Nevertheless, an examination of the accounts and the comparison of one with another, should enable anyone with ordinary intelligence to form a pretty good idea as to the position of an office.

There are two classes of offices—Proprietary and Mutual. In the former the Capital is provided by a body of shareholders, who receive a share (usually $\frac{1}{5}$th or $\frac{1}{10}$th) of the Profits; in the latter, there are no shareholders, and the Funds and Profits belong entirely to the Policy-holders. But it may be observed that in a Proprietary Company some additional security is afforded by the Shareholders' Capital, and the more effective control which shareholders can perhaps exercise over the management. There has been much discussion as to the relative advantages of the two systems, and a good deal can be said on both sides. Judging by actual results, however, it seems to make little difference to a policy-holder whether he is insured in a Proprietary Office or a Mutual Office, other things being equal.

The following points should be carefully noted: (1,) The age of the office; (2,) The funds in hand. As a rule these should be larger than the income in proportion to the age; (3,) The annual income; (4,) The annual amount of new business; (5,) The ratio of expenses to premium income. This should always be less than the amount reserved for expenses in the Periodical Valuation. As the cost of obtaining new business is more than the cost of management afterwards, some allowance must be made for this in comparing

one office with another. But, generally speaking, it will be well to avoid an office showing a ratio of expense much above the average.

A Life policy is not like any other form of investment. The holder enters into a contract that may continue for very many years, and the choice of an office must therefore be a matter of very grave importance. To quote from Whitaker's Almanac :—"Safety should be the *first* consideration, economy next, but really first, for there is no economy in insuring in an unsound office, however low its premiums may be. The rates differ, but in some offices where the premiums appear high, corresponding advantages are offered, and they may really be as economical as other offices in which lower rates are charged, since with the high rates of premium there are commonly some contingent advantages."

The list on the following pages contains the names of nearly all the British Life Assurance Offices; the dates when established; specimens of the rates of premium charged to secure a With-profit policy for £100; and the accumulated Funds exclusive of Paid-up Capital possessed by each.

ACCUMULATED FUNDS

EXCEED

£26,000,000.

Bankers:
THE BANK OF ENGLAND.

ESTABLISHED
1843.

The Largest Life Insurance Company in the World.

THE

MUTUAL

LIFE INSURANCE COMPANY

OF NEW YORK.

Head Office for the United Kingdom:

17 & 18, CORNHILL, LONDON, E.C.

D. C. HALDEMAN, General Manager.

THE MUTUAL OF NEW YORK

Is a purely Mutual Company, and there are no Shareholders to absorb any of its profits, while the accumulated Funds and Surplus all belong to the Insured. At the same time there is no Liability to the Policy-holder whatever beyond the payment of premium named in his Policy.

IT HAS RETURNED TO ITS MEMBERS OVER

£56,000,000,

Or more than Eighty per Cent. of the whole amount of premiums received; and has also over

£26,000,000

CASH ASSETS securely invested, Ample to protect all its Insured.

THE MUTUAL OF NEW YORK'S DISTRIBUTION POLICY is the **most liberal** ever offered by any Insurance Company.

It places no restriction upon Residence, Travel, or Occupation after the Policy has been two years in force.

Bonuses can be taken Annually in Cash, if so chosen, at the expiration of a Distribution period.

Every Policy has a guaranteed surrender value.

Single, Joint Life, and Survivorship Annuities granted.

THE MUTUAL OF NEW YORK, besides being under the Official Supervision of the Insurance Department of the Government for the State of New York, makes Annual returns to the Board of Trade, in accordance with the Life Assurance Companies Act of 1870.

All Claims are payable at the London Office, in sterling, immediately upon acceptance of Proof of Death; and under the jurisdiction of the English Courts.

INDEX TO LIFE ASSURANCE OFFICES.

A, *when Established; B, C, D, Annual Premiums to Insure £100 on death with Profits, at the age of* 30, 40, *and* 50; *E, Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices;* P, *Proprietary Offices.*

TITLE, &c., OF SOCIETY.	A	B	C	D	E
Alliance, Fire and Life, Bartholomew Lane, E.C. *See.*, Robert Lewis. .. .. P	1824	49/2	66/6	94/2	1,607,444
Atlas, Fire and Life, 92, Cheapside, E.C. *See.*, S. J. Pipkin. *Act.*, George King. *Further particulars see page* 633 .. .. P	1808	49/3	63/7	88/8	1,402,378
Blue Ribbon Life and Accident, Colmore Chambers, Newhall Street, Birmingham. *Man. Dir.*, W. H. Greening .. .. P	1883	40/11	55/10	82/3	12,190
British Empire, Mutual Life, 32, New Bridge Street, E.C. *Man.* and *Sec.*, ... M	1847	48/3	64/2	91/1	1,277,266
British Equitable, Life, 4, Queen Street Place, E.C. *Man. Dir.*, W. S. Gover, F.S.S., F.I.A. .. P	1854	49/-	66/-	94/3	1,256,427
British Workman's, Life and Endowments, Broad Street Corner, Birmingham. *Sec.*, D. A. Beckett. *Further particulars, see page* 633 .. .. P	1866	47/11	64/6	92/3	90,897
Caledonian, Fire and Life, 19, George Street, Edinburgh. *Man.*, D. Deucher. London Office, 82, King William Street, E.C. .. .. .. P	1805	48/9	64/6	88/6	915,613
Church of England, Life and Fire, 9 and 12, King Street, Cheapside, E.C.. *Sec.*, H. M. Baker P	1840	46/10	63/6	91/11	656,803
City of Glasgow, Life, 28a, Renfield Street, Glasgow. *Man.*, F. F. Elderton. London Office, 12, King William Street, E.C. *Sec.*, W. Kent Lemon P	1838	48/5	64/6	89/10	1,662,635
Clergy Mutual, Life, Endowments, &c., 2 & 3, Sanctuary, Westminster. *Sec.*, Matthew Hodgson M	1829	46/4	62/2	87/4	3,470,184
Clerical, Medical and General, Life, 15, St. James' Square, and Mansion House Buildings. *Act.*, B. Newbatt .. .. P	1824	48/9	65/-	90/9	2,754,742
Colonial Mutual, Life and Annuity, 33, Poultry, E.C. *Man.*, G. E. Alder. *Sec.*, W. H. Harvey M	1873	44/8	60/9	86/2	863,281
Commercial Union, Fire, Life, and Marine, 19 & 20, Cornhill, E.C. *Act.*, T. E. Young, B.A.... P	1861	49/5	64/2	87/8	1,095,313
Co-operative, Fire, Life, and Fidelity, Corporation Street, Manchester. *Man.*, James Odgers P	1867	45/10	61/8	87/6	647
Crown Life, 188, Fleet Street, E.C. *Sec.*, A. Mackay P	1825	49/3	65/1	92/5	1,984,956
Eagle, Life, 79, Pall Mall, S.W. *Sec.*, G. Humphreys, M.A., F.I.A. .. .. P	1807	50/8	65/5	91/4	2,798,626
Economic, Life, 6, New Bridge Street, Blackfriars. *Sec.*, J. R. Grimes. *Act.*, R. C. Fisher. .. M	1823	44/3	59/9	87/6	3,596,468
Edinburgh, Life and Annuities, 22, George Street, Edinburgh. *Sec.*, A. Hewat, F.F.A., F.I.A. London Office, 11, King William Street, E.C. *Sec.*, Frank Griffith .. .. .. P	1823	47/7	63/2	89/-	2,337,527
English and Scottish Law, Life, Annuity, Endowment, and L.N., 12, Waterloo Place, S.W. *Sec.*, F. E. Colenso .. .. P	1839	47/8	64/6	90/-	1,496,289
Equity and Law, Life, 18, Lincoln's Inn Fields, W.C. *Act.*, G. W. Berridge.. .. .. P	1844	48/10	64/6	90/9	2,160,338
Equitable Society, Life and Survivorship, Mansion House Street, E.C. *Act.*, A. F. Burridge M	1762	53/5	67/11	90/8	4,354,834
Friends' Provident Life, Annuities, &c., Bradford, Yorkshire. *Sec.*, John Bell Tennant .. M	1832	45/9	58/1	79/3	1,920,922
General Life and Fire, 103, Cannon Street, E.C. *Sec.*, Henry Ward .. .. P	1837	49/10	65/4	92/8	986,524

A, *when Established*; B, C, D, *Annual Premiums to Insure* £100 *on death, with Profits, at the Age of* 30, 40, *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital*. M, *Mutual Offices*; P, *Proprietary Offices*.

Title, &c., of Society	A	B	C	D	E
Gresham, Life, St. Mildred's House, E.C. *Sec.*, T. G. Acland .. .. P	1848	49/-	65/8	94/3	£ 3,992,981
Guardian, Fire and Life, 11, Lombard Street, and 21, Fleet Street. *Sec.* T. G. C. Browne .. P	1821	48/6	64/6	89/3	2,335,815
Hand-in-Hand, Fire, Life, and Annuities, 26, New Bridge Street, Blackfriars. E.C., *Man.*, B. Blenkinsop .. .. M	1696	50/8	68/10	99/3	2,362,265
Imperial, Life, 1, Old Broad Street, and 22, Pall Mall. *Act. & Man.* J. Chisholm .. .. P	1820	46/11	62/1	87/5	1,578,926
Lancashire, Life and Fire, Exchange Street, Manchester. *Gen. Man.*, George Stewart. London Office, 14, King William Street, E.C., *Sec.*, John Oliver .. .. P	1852	48/6	63/6	90/6	801,143
Law Life, 187, Fleet St., next St. Dunstan's Church. *Act.*, Griffith Davies; *Assis. Act.*, A. B. Adlord .. .. P	1823	49/4	64/10	91/-	5,133,216
Law Union, Life, Fire, and Annuities, 126, Chancery Lane. *Sec.*, Frank McGedy .. .. P	1854	49/4	65/3	92/-	868,279
Legal and General Life, 10, Fleet Street, E.C. *Sec.*, E. Colquhoun .. .. P	1836	50/9	65/11	90/9	2,235,726
Life Association of Scotland, 82, Prince's Street, Edinburgh. *Secs.*, J. Sharpe and J. C. Wardrop. London Office, 5, Lombard St. *Sec.*, E. H. Holt P	1838	50/-	65/4	93/4	3,410,598
Liverpool and London and Globe, Fire, Life and Annuities, 1, Dale Street, Liverpool. *Sec.*, John M. Dove. London Office, 7, Cornhill, E.C. *Sec.*, A. Hendriks .. .. P	1836	49/3	65/6	91/3	3,898,798
London Amicable, Life and Accident, 3, Regent Street, S.W. *Sec.*, Walter Wieland .. P	1887	47/10	63/5	91/4	30,038
London and Lancashire, Life, 66 & 67, Cornhill, E.C. *Sec.*, G. W. Mannering .. .. P	1862	46/10	62/4	86/10	591,248
London Assurance Corporation, Fire, Life & Marine 7, Royal Exchange. *Act.*, A. H. Bailey P	1720	49/6	64/11	91/5	1,899,682
London, Edinburgh, and Glasgow, Life, Industrial, and Accidents, 33, New Bridge Street, E.C. *Sec.*, C. W. Skinner .. .. P	1881	48/11	64/7	92/-	47,567
London Life Association, 81, King William Street, E.C. *Sec.*, E. Docker, M.A. .. .. M	1806	50/3	77/-	107/6	3,945,113
Marine and General Mutual, Life and Marine, 14, Leadenhall Street, E.C. *Sec.*, C. G. Laing M	1832	48/10	65/11	91/11	534,969
Metropolitan Life, 3, Prince's Street, Bank, E.C. *Act.*, Arthur Pearson .. .. .. M	1835	49/9	66/4	92/-	1,871,408
Midland Counties, Fire, Life, Hail, and Annuities, Silver Street, Lincoln. *Sec.*, Benjamin Vickers. London Office, Gresham Buildings, Basinghall St. E.C. *Man.* E. A. Walford .. .. P	1851	49 11	64 8	89/6	50,312
Mutual Life, 3, King Street, Cheapside, E.C. *Act.*, H. W. Manly, F.I.A. *Sec.*, H. G. Rowsell M	1834	48 10	66 8	97 11	1,157,358
National Assurance of Ireland, Fire, Life, and Annuities, 3, College Green, Dublin. *Sec.*, Harold Engelbach. London Office, 33, Nicholas Lane, E.C. *Sec.*, Charles Smith .. .. .. P	1822	48/7	64/3	91/7	121,892
National Guardian, Life and Loans, 21, New Oxford Street, W.C. *Sec.*, Thomas J. Bourne .. P	1854	48/6	64/8	86/8	8,071
National Life, 2, King William Street, City. *Man. & Sec.*, H. J. Puckle .. .. M	1830	50/4	65/9	92/8	829,777
National Provident, 48, Gracechurch Street, E.C. *Act.* and *Sec.*, Arthur Smither .. .. M	1835	50/2	66/3	91/1	4,337,259
North British & Mercantile, Fire, Life, & Annuities, 61, Threadneedle Street, E.C., and 64, Prince's Street, Edinburgh. *Life Man. & Act.*, H. Cockburn. *Sec.*, F. W. Lance .. .. .. P	1823	49/10	66/1	91/11	4,672,908
Northern Assurance, 1, Moorgate Street, E.C. *Gen. Man.*, Jas. Valentine. *Sec.*, H. E. Wilson P	1836	48/8	64/10	92/4	2,219,475

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death, with Profits, at the age of* 30, 40 *and* 50; E, *Assurance and Annuity Funds, exclusive of paid-up Capital.* M, *Mutual Offices*; P, *Proprietary Offices.*

Title, &c., of Society.	A	B	C	D	E
					£
Norwich Union, Life, Norwich. *Sec.*, J. J. W. Denchar. London Office, 50, Fleet Street, E.C. M	1808	48/10	62/-	86/-	1,825,136
Patriotic of Ireland, Life and Fire, 9, College Green, Dublin. *Man.*, B. H. O'Reilly. London Office, 49, Cornhill, E.C. *Man.*, ... P	1824	48/8	64/5	90/4	107,076
Pearl, Life, London Bridge, City, E.C. *Man.*, P. J. Foley, M.P. .. .. P	1864	50/-	67/5	96/6	174,252
Pelican, Life, Lombard Street, and Charing Cross. *Sec.*, R. C. Tucker .. .. P	1797	48/9	65/2	93/6	1,352,058
Positive, Life, 34, Cannon Street, E.C. *Sec.*, A. G. Mackenzie .. .. P	1870	47/1	64/7	94/3	428,559
Post Office, Life & Annuities, St. Martin's le Grand, *Act.*, A. Finlaison .. .. P	1865	46/7	62/9	89/10	—
Provident, Life, 50, Regent Street. *Sec.*, C. Stevens P	1806	50/2	66/3	91/1	2,539,609
Provident Clerks, Life and Benevolent Fund, 27, Moorgate Street, E.C. *Sec.*, John E. Gwyer M	1840	46/4	62/8	92/2	1,449,483
Provincial, Life, High Street, Wrexham. *Sec.*, John Francis. London Office, 7, Queen Victoria Street, E.C. *Sec.*, E. R. Speirs .. .. .. P	1852	50/-	65/1	90/4	346,753
Prudential (Ordinary), Life, Holborn Bars. *Sec.*, W. J. Lancaster .. .. P	1848	49/6	65/11	91/11	2,818,561
Queen, Fire, Life, and Annuities, Queen Insurance Buildings, Liverpool. *Man.*, J. K. Rumford, London Office, Gracechurch Street. *Sec.*, T. J. Davidson P	1857	49 4	65/-	89/-	650,554
Refuge, Industrial Life, 89, Corporation Street, Manchester. *Man.*, James Proctor. London Office, 29, New Bridge Street. *Sec.*, W. Hewitt P	1864	45 10	61/6	88/5	182,432
Reliance, Life, 71, King William Street. *Sec.*, E. C. Griffith .. .. M	1840	49 4	65/10	94/2	698,187
Rock, Life and Survivorship, 15, New Bridge Street, Blackfriars. *Sec.*, G. S. Crisford .. .. P	1806	53/5	67/11	90/8	1,823,020
Royal, Fire, Life, and Annuities. Royal Insurance Buildings, Liverpool. *Man.*, J. H. McLaren. London Office, Lombard St. *Sec.*, John H. Croft P	1845	49/9	64 1	88/3	3,443,073
Royal Exchange Assurance, Fire, Life, Annuities, &c., Royal Exchange, and 29, Pall Mall. *Act.*, G. H. Ryan .. .. P	1720	48/9	64/11	91/9	2,089,111
Sceptre, Life and Endowments, 40, Finsbury Pavement, E.C. *Sec.*, J. G. Phillips .. .. P	1864	48/8	64/8	90/6	356,351
Scottish Amicable, Life, St. Vincent's Place, Glasgow. *Sec.*, W. G. Spens .. .. M	1826	51/9	66/3	89/1	2,949,486
Scottish Economic, Life, Accident, and Annuities, 2, York Buildings, Edinburgh. *Sec.*, A. Scott. London Office, 8, King St., Cheapside. *Sec.*, E. T. Clifford P	1885	40/8	54/11	79/8	6,527
Scottish Equitable, Life, 26, St. Andrew Square, Edinburgh. *Sec.*, W. Finlay. London Office, 69, King William Street, E.C. *Sec.*, W. T. Gray M	1831	50/3	65/5	90/9	3,119,692
Scottish Imperial, Life, 183, West George Street, Glasgow. *Man.*, T. Wilkinson Watson. London Office, 4, King William Street, E.C., *Man.*, William Oates .. .. P	1865	46/7	63/5	91/7	322,121
Scottish, Life, Accident and Annuities, 77, George Street, Edinburgh. *Sec.*, James Sorley, F.I.A. London Office, 20, King William Street, E.C. *Sec.*, George Struthers .. .. P	1881	49/5	64/6	90/5	100,599
Scottish Metropolitan, Life, 25, St. Andrew Square, Edinburgh. *Sec.*, W. R. Macdonald, F.F.A. London Office, 79, Cornhill, E.C. *Sec.*, Davidson Walker .. .. P	1876	40/8	54/7	79/7	115,900
Scottish Provident, Life and Annuities, 6, St. Andrew Sq., Edinburgh. *Man.*, Jas. Watson. *Secs.*, J. S. Morton and J. G. Watson. London Office, 17, King William Street, E.C. *Sec.*, J. Muir Leitch *Further particulars see page* 634 .. .. M	1837	41/6	54/9	81/7	6,516,479

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death with Profits, at the age of 30, 40, and 50*; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* **M**, *Mutual Offices*; **P**, *Proprietary Offices.*

Title, &c., of Society.	A	B	C	D	E
					£
Scottish Provincial, Fire, Life, and Annuities, 91, Union Street, Aberdeen. *Man.*, T. Yuille Wardrop. London Office, 64, Cannon Street, City. *Man.*, David G. Simpson .. .. P	1825	47/11	64/8	91/8	1,542,069
Scottish Temperance, Life and Accident, 81, Renfield Street, Glasgow. *Sec.*, Adam K. Rodger. London Office, 3, King Street, Cheapside. *Sec.*, Walter Cowley .. .. P	1883	48/6	63/9	89/10	39,763
Scottish Union and National, Fire, Life, and Annuities, 35, St. Andrew Square, Edinburgh. *Sec.*, J. K. Macdonald. London Office, 3, King William Street, E.C. *Sec.*, William Porteous P	1824	50/-	65/-	90 -	2,882,229
Scottish Widows' Fund, Life and Survivorship, 9, St. Andrew Square, Edinburgh. *Man. & Act.*, A. H. Turnbull. *Sec.*, J. J. P. Anderson M	1815	51/9	66/3	90/7	10,250,000
Standard, Life, 3 and 5, George Street, Edinburgh. *Sec.*, H. Jones. London Office, 83, King William Street, and 3, Pall Mall East. *Sec.*, W. Bentham P	1825	48/11	64/5	89/-	6,792,121
Star, Life, Annuities, Endowments, 32, Moorgate Street, City. *Sec.*, W. W. Baynes, F.I.A. P	1843	48/9	64/11	90/6	2,793,350
Sun, Life, Threadneedle Street, Charing Cross, and Oxford Street. *Joint Actuaries*, J. G. Priestley and H. C. L. Saunders.. .. .. .. P	1810	49/2	66/6	94/2	2,150,296
Union, Fire and Life, Cornhill, and Baker Street. *Sec.*, C. Darrell .. .. P	1714	49/3	65/3	92 -	1,257,464
United Kent, Life and Annuities, High St., Maidstone. *Gen. Man.*, Walter L. Seyfang. London Office, 124, Cannon St., E.C. *Man.*, Edgar Rice P	1824	49/8	64/3	90/5	520,780
United Kingdom Temp., etc., Life, 1, Adelaide Place, London Bridge. *Sec.*, Thomas Cash .. M	1840	48/10	64/11	90/6	4,411,907
Universal, Life, 1, King William Street, City. *Sec.*, Fred Hendriks .. .. P	1834	48/10	63/-	85/6	1,102,235
University, Life, 25, Pall Mall, S.W. *Sec.*, Charles McCabe .. .. P	1825	50/9	64/7	87/6	934,876
Victoria, Life and Endowment, Finsbury Square Buildings, E.C., *Sec.*, Arthur J. Cook .. M	1860	49/3	65/7	93 -	47,117
Wesleyan and General, Life, Annuities, Sickness, Moor Street, Birmingham. *Gen. Man.*, R. A. Hunt, A.I.A., F.S.S. London Office, 2, Finsbury Square, E.C. *Man.*, W. Syers .. .. M	1841	48/9	66/6	96/3	121,576
West of England, Fire and Life, Exeter. *Sec.*, E. H. Smithett. London Office, 20, New Bridge Street, E.C. *Man.*, G. W. Cooke. .. .. P	1807	51/3	66/1	89/1	858,687
Western Counties and London, Life, Annuities, Endowment, 20, Prince's Square, Plymouth. *Sec.*, W. J. White .. .. M	1861	47/11	63/9	88/9	67,501
Westminster and General, Life, 28, King St., Covent Garden, W.C. *Act.*, Edward Cutbush, F.I.A. P	1836	48/10	65/-	90/6	505,303
Whittington, Life, 58, Moorgate Street, E.C. *Man. and Sec.*, Alfred T. Bowser .. .. .. P	1855	43/2	58/-	81/10	192,456
Yorkshire, Fire and Life, St. Helen's Square, York. *Sec.*, J. A. Cunninghame. London Office, 82, Old Bond Street, E.C. *Sec.*, J. M. C. Johnston P	1824	49/7	65/-	89/1	587,575
Yorkshire Provident, Industrial Life, Oxford Place, Leeds. *Sec.*, T. Roberts-Watson .. .. P	1870	44/-	58/8	81/8	775

ACCIDENTS, COMPENSATION IN CASE THEY HAPPEN.

SICKNESS, AN INCOME DURING DISABLEMENT.

INSURE WITH

The HEALTH INSURANCE CORPORATION

LIMITED.

CHIEF OFFICE:—New Broad St. House, LONDON, E.C.

"THE BEST INSURANCE."

The Standard Life Assurance Company.

Established 1825. Constituted by Special Acts of Parliament.

HEAD OFFICE: 3 AND 5, GEORGE STREET, EDINBURGH.

Present Position.

ANNUAL REVENUE - - -	£935,000
ACCUMULATED FUNDS - - -	£7,000,000
CLAIMS PAID - - - - -	£12,500,000

Advantages to Assurers.

Policies with Free Whole World Residence, and Unchallengeable after Two Years. Fixed Surrender Values. Moderate Premiums. Undoubted Security. Early Payment of Claims.

Uninterrupted Success.

Since 1865, the Policies Granted have each year exceeded £1,000,000 sums assured, a result maintained continuously for so long a period by no other office in the United Kingdom.

THE ASSURANCES EFFECTED IN 1888 AMOUNTED TO £1,496,000

BONUS YEAR, 1890.

The Surplus Funds are divided every five years, and the next distribution takes place as at 15th November, 1890. Policies effected with profits before that date will be entitled to receive one full year's bonus. On the last occasion, no less than £930,000 was declared as bonus.

Every Facility given to Medical Men in arranging Assurances on their Lives.

LONDON:—83, King William Street, E.C. and 3, Pall Mall, East, S.W.
DUBLIN:—66, Upper Sackville Street.

ATLAS ASSURANCE COMPANY.

FIRE. *ESTABLISHED* 1808. LIFE.

HEAD OFFICE, LONDON—92, CHEAPSIDE, E.C.

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SECRETARY—SAML. J. PIPKIN.
BANKERS—Messrs. PRESCOTT, CAVE BUXTON, LODER & CO.
ACTUARY—GEORGE KING.

BRANCHES:

LONDON, West End, 4, Pall Mall East, S.W.
BRISTOL, 20, Clare Street.
LEEDS, 15, Park Row.
LIVERPOOL, 1, Tithebarn Street.
MANCHESTER, 24, Booth Street, Cooper Street.
GLASGOW, 149, West George Street.

INCOME FOR 1888—PREMIUMS & INTEREST, £356,113.

THE FUNDS OF THE COMPANY ARE EXCEPTIONALLY LARGE IN PROPORTION TO ITS LIABILITIES.

Capital Subscribed - - -	£1,200,000
Capital Paid-up - - -	£144,000
Fire, Reserve, and other Funds -	£280,659
Life Funds - - - -	£1,402,378
TOTAL ASSETS - -	£1,884,703.

LIFE DEPARTMENT.

Every description of Life Assurance is transacted by the Company, and except in very special cases the **Policies are absolutely free from Conditions as to residence, travel, and occupation.**

After the Premiums have been paid for at least two years, a **liberal Surrender Value** is allowed should the Policy be discontinued.

Policies are **non-forfeitable and cannot lapse** so long as they possess a Surrender Value.

The Policy does not become void through the Death of the Life Assured by Suicide, or by Duelling, or by the Hands of Justice, provided such death do not take place within one year of the date of the Policy.

Claims are payable eight days after proof of death and title.

LIFE ASSURANCE AT COST PRICE.—The Directors have recently introduced a system of Life Assurance at cost price, the rates for which are the lowest of any Insurance Company in the world. They have been constructed in order to give to policy holders the **immediate benefit** of future bonuses. For particulars see Special Prospectus.

ADVANCES.

The Directors call attention to their Mortgage Assurance Scheme, under which Advances are made on approved Properties; the repayments extending over 10, 15, or 20 years, if the borrower live, but ending at his death during the term.—(See special Prospectus.)

FIRE DEPARTMENT.

Policies issued on nearly every kind of Property at equitable rates, and free of stamp expense.
Losses occasioned by Lightning will be paid whether the property be set on fire or not.
Loss or Damage caused by Explosion of Coal Gas in any building insured will be made good.
Seven Years' Policies granted on payment of Six Years' Premiums.

Active and Influential Agents wanted in Unrepresented Districts.

SAMUEL J. PIPKIN, *Secretary.*

BRITISH WORKMAN'S
ASSURANCE COMPANY, LIMITED.

Established 1866. *Incorporated under the Companies Act*, 1862.

Chief Offices: BROAD STREET CORNER, BIRMINGHAM.

EXTRACTS FROM THE DIRECTORS' REPORT,

FOR THE YEAR ENDING APRIL 30TH, 1889.

In presenting their Twenty-third Annual Report, the Directors are pleased to state that the success of the Company has been fully sustained in the past year.

The total Income of the Company for the year was £212,310 17s. 4d., being an increase of £33,999 18s. 8d. The total amount of Payments was £196,491 1s. 11d., leaving a balance upon the year's accounts of £15,819 15s. 5d., making the total Funds at the close of the year, £112,122 14s. 5d.

The amount paid in Claims during the year was £87,245 13s. 5d., including £4,170 2s. 5d. Surrender Claims. The total sum paid up to the 30th of April, 1889, was £556,506 15s. 3d.

The number of Assurants upon the Company's books on the 30th of April, 1889, was 448,520, and their annual Premium will be £246,770 18s. 10d., shewing a nett increase of 74,422 Assurants, and £48,350 in Premium Income.

HENRY PORT, Managing Director.

THE

SOUTH AFRICAN JOURNAL

PUBLISHED FORTNIGHTLY.

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SCOTTISH PROVIDENT INSTITUTION.

HEAD OFFICE: ST. ANDREW SQUARE, EDINBURGH.
LONDON OFFICE: 17, KING WILLIAM STREET, E.C.

THIS SOCIETY was instituted at Edinburgh in 1837 with the object of giving to the Assured the full benefit of the **Low Premiums** hitherto confined to a few of the Proprietary Offices, while retaining the **Whole Profits** for the Policyholders.

Experience has proved that with economy and careful management these Premiums will not only secure greatly **Larger Assurances** from the first; but, by **Reserving the Surplus** for those who live long enough to secure the Common Fund from loss, will in most cases provide **Eventual Benefits** as large as under the usual system of High Premiums.

SEPTENNIAL PROGRESS OF THE INSTITUTION.

IN PERIODS ENDING 31ST DEC.	ASSURANCES EFFECTED.	FUNDS AT THE END OF PERIOD.	INCREASE OF FUNDS.	SURPLUS (two-thirds divided).
1845 (8 years)	£942,899	£69,009	£69,009	—
1852	2,571,348	254,675	185,666	£26,159
1859	4,590,300	633,514	378,839	79,644
1866	7 525,373	1,245,372	611,858	181,544
1873	12,297,445	2,253,175	1,007,803	376,377
1880	19,695,470	3,913,252	1,660,077	624,473
1887	**26.837,048**	**6,179,746***	**2,266,494†**	**1,051,035**

* The AMOUNT OF ASSURANCES effected, and the FUNDS accumulated in 50 years, have exceeded those of any other Office at a similar period.

The Accumulated Funds are now close on £7,000,000.

† The INCREASE of FUNDS in the last Seven Years (over 2¼ millions) is greater than in any other Office in the Kingdom—due in great measure to the exceptionally low cost of management, the *ratio* of which to PREMIUMS is little over 9 per cent., or 6 per cent. to INCOME.

EXAMPLES OF PREMIUM FOR £100 AT DEATH—WITH PROFITS.

AGE.	25	30	35	40	45	50
During Life . .	£1 18 0	£2 1 6*	£2 6 10	£2 14 9†	£3 5 9	£4 1 7
21 Payments. .	2 12 6	2 15 4	3 0 2	3 7 5	3 17 6	4 12 1

[The usual *non-participating* rates differ very little from these Premiums.]

* A person of 30 may secure £1000 at death (with profits) by a yearly payment, *during life*, of £20 : 15s., which would generally elsewhere secure (with profits) **£800** only, instead of **£1000.** OR he may secure the same sum by 21 payments of £27 : 13 : 4—*being thus free of payment after age* 50.

† At age 40 the Premium *ceasing at* 60 is, for £1000 (with profits), £31 : 14 : 2, being about the same as most Offices require during the whole term of life. *Before these Premiums have ceased the Policy will have shared in at least one division of profits.*

The SOCIETY has taken a leading part in the Removal of Restrictions and Grounds of Challenge.

FOREIGN RESIDENCE.—All Policies (not Seafaring or Military, for which special arrangements may be made) are **World-Wide** after five years—provided the Assured has attained age 30.

REPORTS, *with* BALANCE-SHEET, TABLES *of* RATES, *etc., may also be had.*

J. MUIR LEITCH, *London Secretary.* JAMES WATSON. *Manager.*

BRISTOL OFFICE: 31, CLARE STREET.

A. HEYWARD, *Local Secretary.*

Medical Annual Official and Trade Directory.

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Offices: 299, Oxford St., London, W.

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Digitalis Tinct., 1 min.
Digitalin, 1-100 gr.
Dover Powder, 1-4 and 5 gr.
Euonymin Resin, 1-8 gr.
Hydrarg. cum Creta (Grey Powder), 1-3 gr.
Hydrarg. Iod. Rub., 1-20 gr.
Hydrarg. Iod. Vir., 1-8 gr.
Hydrarg. Perchlor., 1-100 gr.
Hydrarg. Subchlor. (Calomel), 1-10 & 1 gr.
Hyoscyamus Tinct., 1 min.
Ipecac. and Opium (Dover Powd.), ¼ and 5 gr.
Ipecac. Powder, 1-10 and 5 gr.
Iron and Quinine Cit., 3 gr.
Laxative Vegetable.
Lithia Carbonate, 2 gr.
Manganese Dioxide, 2 gr.
Morphine Sulph., 1-20 and 1-8 gr.
Nitro-glycerine.
Nux Vomica Tinct., 1 min.
Opium Tinct. (Laudanum), 2 min.
Papain, 2 gr.
Pepsin, Pure (Fairchild).
Pepsin, Saccharated, 5 gr.
Peptonic.
Phenacetin, 5 gr.
Pilocarpin Mur., 1-20 gr.
Podophyllin Resin, ¼ gr.
Potash Bicarb., 5 gr.
Potash Chlorate, 5 gr.
Potash Chlorate with Borax.
Potash Nit. *(Sal Prunella)*, 5 gr.
Potash Permanganate, 1 and 2 gr.
Potassium Bromide, 5 and 10 gr.
Potassium Iodide, 5 gr.
Quinine, 1-10, ½, 1, 2, 3, and 5 gr.
{ Quinine Sulphate, 1 gr. Iron Hypophosphite, 2 gr. Acid Arsenious, Strychnine Sulphate, aa 1-50 gr. Saccharin, 1-100 gr.
Rhubarb, 3 gr.
Rhubarb Comp. (Pil.), 3 gr.
Rhubarb Comp. Pulv. (Gregory Powder), 5 gr.

TABLOIDS—Continued.

Rhubarb and Soda, 5 gr.
Saccharin, ½ gr.
Salol, 5 gr.
Salicin, 5 gr.
Santonin, ¼ gr.
Soda Bicarbonate, 5 gr.
Soda-Mint (Soda, Ammon., Carb., and Mint).
Soda Salicylate, 3 and 5 gr.
Strophanthus Tinct., 2 min.
Sulphonal, 5 gr.
Sulphur Comp. (Dr. Garrod's formula).
Tannin, 2½ gr.
Test Tabloids (Fehling's).
Thirst.
Tinct. Camph. Co. (Paregoric), 2 min.
Tonic Comp. { Iron Pyrophosphate, 2 gr. / Quinine Sulphate, 1 gr. / Strychnine Sulphate, 1-100 gr.
Trinitrine (*Nitro-glycerine*), 1-100 and 1-50.
Trinitrine and Amyl Nitrite.
Trinitrine Comp. { Trinitrine, 1-100 gr. / Nitrite of Amyl, ¼ gr. / Capsicum, 1-50 gr. / Menthol, 1-50 gr.
Urethane, 5 gr.
Voice (Potash, Borax, and Cocaine).
Warburg Tincture, 30 mins. in each.
Zinc Sulphate, 1 gr.
Zinc Sulphe-carbolate, 2 gr.
Zymine Tabloids.
Zymine Comp. Tabloids.

These pure and palatable Tabloids of Compressed Drugs are supplied in convenient packages for dispensing, and at moderate prices.

B. W. & Co. Hypodermic Tabloid Pocket Case, fitted and filled complete (12 tubes of 12 or 20 Tabloids each), 15s.

The B. W. & Co. HYPODERMIC TABLOID POCKET CASE.

The B. W. & Co. No. 7 Hypodermic Tabloid Pocket Case contains 144 carefully apportioned, accurately made Tabloids of compressed alkaloids and active principles. Such an array as this constitutes an armamentarium never before placed in the hands of a medical man. It constitutes an emergency case adapted to a very wide range of usefulness. No matter where he may be, the physician will find it almost daily of service, for the HYPODERMIC TABLOIDS are not restricted in their uses to Hypodermic injections, but may be given by the mouth, and used in other ways as well.

DOSE LIST OF HYPODERMIC TABLOIDS.

Aconitin—Dose, 1-260 gr., externally in neuralgia, shingles, etc.
Apomorphine—Dose, 1-10 gr., as an emetic in catarrh, poisoning, etc.
Atropin—Dose, 1-150 gr. to 1-60 gr., in pelvic pains, sciatica, etc.
Caffein Sodio-Salicylate—Dose, 1-2 gr., in neuralgia, headache, dropsy.
Cocaine—Dose, 1-6 gr. to 1-2 gr., in all minor surgical operations.
Codein Phosphate—Dose, 1-4 gr., in diabetes, cough, pain of cancer.
Colchicin—Dose, 1-100 gr., in gout, rheumatism, etc.
Cornutin (active principle of Ergot)—Dose, 1-60 gr.
Curare—Dose, 1-12 gr., in hydrophobia, convulsions, tetanus, etc.
Digitalin—Dose, 1-100 gr., in cardiac and renal disease (dropsy).
Ergotinin—Dose, 1-150 gr. to 1-300 gr., in hæmorrhage, etc.
Eserin—Dose, 1-100 gr., in ophthalmic practice, constipation, etc.
Homatropin (unirritating)—Dose, 1-250 gr., to dilate pupil, etc.
Hydrarg. Perchlor.—Dose, 1-60 gr. to 1-30 gr., in syphilis, carbuncles, etc.
Hyoscine—Dose, 1-200 gr. to 1-75 gr., as a powerful cerebral sedative.
Hyoscyamin—Dose, 1-80 gr. to 1-20 gr., in insomnia, nervous trembling, convulsions.
Morphine Bi-Meconate—Dose, 1-8 gr. to 1-6 gr., 1-4 gr. to 1-3 gr.
Morphine Sulphate—Dose, 1-12, 1-8, 1-6, 1-4, 1-3 to 1-2 gr.
Morphine and Atropine combinations.
Pilocarpine—Dose, 1-10 gr., 1-3 gr. to 1-2 gr., as a powerful diaphoretic.
Quinine Hydrobromate—Dose, 1-2 gr., in sunstroke, tropical fevers, etc.
Sclerotinic Acid—Dose, 1-2 gr., to excite contraction of uterus.
Strophanthin—Dose, 1-500 gr., in dyspnœa with cardiac dropsy.
Strychnine—Dose, 1-100 gr. to 1-60 gr., in paralysis and gastralgia.

HYPODERMIC TABLOIDS of the principle drugs and alkaloids supplied to the medical profession in Tubes, containing from 12 to 20 Tabloids each, price 1s. per tube.

VAPOROLES.—These consist of beautiful little silken sacks enclosing very friable glass capsules, which contain the various well-known medicaments used for inhalation, and introduced into the Throat Hospital Pharmacopœia by Sir Morell Mackenzie. The glass capsule is surrounded with absorbent cotton, and when crushed may be dropped into a steam inhaler, the water-bottle of the Vereker Chloride of Ammonium Inhaler, or inhaled dry by holding in the palm of the hand, or in a handkerchief, according to the accompanying directions. Some Vaporoles are specially suited for fumigating purposes.

2/- per box of 1 dozen.

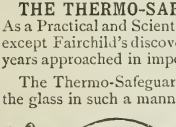
ARTIFICIAL ANTISEPTIC EAR-DRUM.—One of the most important inventions of the year in the way of medical appliances is the Artificial Antiseptic Ear-Drum, designed by Dr. Ward Cousins, and made the subject of a paper read by this gentleman at the Leeds Meeting of the British Medical Association.

These Drums consist of delicate little Welsh-hat-shaped antiseptic fibrous skeleton drums of a texture sufficiently close to act as a substitute for the natural drum in cases of perforation, or to protect the natural membrane when in a sensitive or inflamed condition. Antiseptically, they are of great service in conditions of the middle ear attended with suppuration.

In cases of deafness through perforation they come as a special boon. An important feature is the ease with which these drums may be inserted and removed. The Artificial Ear-Drum is entirely the conception of Dr. Ward Cousins, from whom we acquired all rights; but to enable us to produce them at a reasonable price, we have devised an automatic machine which turns them out with great rapidity and at a very nominal cost. The dozen Drums are put up in neat paper boxes to retail at 1s. per box. To the profession, 8d. per box.

THE THERMO-SAFEGUARD FEEDING BOTTLE (B. W. & Co.).—As a Practical and Scientific Invention for protecting the lives of infants, nothing, except Fairchild's discovery of the pure Zymine Peptonising agents, has of late years approached in importance the Thermo-Safeguard Feeding Bottle.

The Thermo-Safeguard Feeding Bottle has a Thermometer imbedded in the glass in such a manner as to correctly and distinctly indicate the temperature of the contents. It has the further advantage (since the bottle is marked in ounces) of giving a register of the exact amount of food taken at each feeding, and thus tends to avert the evil of over-feeding.



"The bottle has a great deal to recommend it, and is likely to come largely into use."—*Brit. Med. Jour.*

"It is the best of all feeding bottles, and ought to be universally used."—*Edin. Med. Jour.*

This invention has been received with the highest favour by the leading minds in the medical profession, and, although but quite recently perfected, has proved a great success. It has a special adaptability in the process of peptonising milk with the Zymine Peptonising Powders (Fairchild). That they may come within the reach of all, we have fixed the prices at about the same as those charged for ordinary feeding bottles, viz., retailing at 1s., 1s. 6d., and 2s. 6d. No samples.

BURROUGHS, WELLCOME & CO., Snow Hill Buildings, **LONDON, E.C.**

Will be happy to supply Trial Specimens to medical men free on request.

DR. APOSTOLI'S

Instruments for Uterine Fibroids.

PARTICULARS ON APPLICATION.

New List of Medico-Electrical Apparatus.

The Students' Ophthalmoscope

Is a refraction Ophthalmoscope with 8 Lenses and Tilting Mirror and Large Bi-Convex Lens in Neat Case. Price 15s.

BRIT. MED. JOUR., July 10, 1886, p. 71. [LANCET, May 8, 1886, p. 881.

Made only by COXETER & SON, 4 & 6, Grafton Street, Gower Street, London, W.C.

THE MOST EFFECTUAL BANDAGE FOR THE CURE OF ULCERS

AND OTHER DISEASES OF THE LEG.

Statham's Porous or Solid Rubber Bandages, with Tapes or Buttons, in Grey or Black, made from the finest Para Rubber.

PRICES, POST FREE.

Feet.	Inch.			Each.	Feet.	Inch.			Each
5 by	2½	wide	...	2/-	5 by	3	wide	...	2/3
7½ by	2½	,,	...	3/-	7½ by	3	,,	...	3/6
10½ by	2½	,,	...	4/-	10½ by	3	,,	...	4/6
15 by	2½	,,	...	6/-	15 by	3	,,	...	6/9
21 by	2½	,,	...	8/-	21 by	3	,,	...	9/-

Air and Water Beds and Cushions, Bed Sheets, Urinals, Ice Caps, Hot Water Pillows.

H. STATHAM & CO. (CORPORATION STREET), MANCHESTER.

COCA TABLETS.

Containing Borax to promote action on the throat and the vocal cords.

In Boxes 1/-, 2/6, and 4/-.

COCA LOZENGES.

Sustaining, will effectively remove all fatigue and weariness.

In Boxes 1/-, 2/6, and 4/-.

COCA ELIXIR.

For making Coca Wine, the dose being fifteen to twenty drops to the wineglass; can be taken in any fluid.

3/- per Bottle.

COCA

Non-enervating.

MILD,
12/- per lb.
STRONG,
12/- per lb.

In Tin Boxes only, of 2, 4, & 8-ozs.

TOBACCO

Anti-Nicotine!

MEDIUM,
12/- per lb.

In Tin Boxes only, of 2, 4, & 8-ozs.

COCA TEA.

Coca, in combination with selected teas; digestive, tonic, invigorating, and delicious.

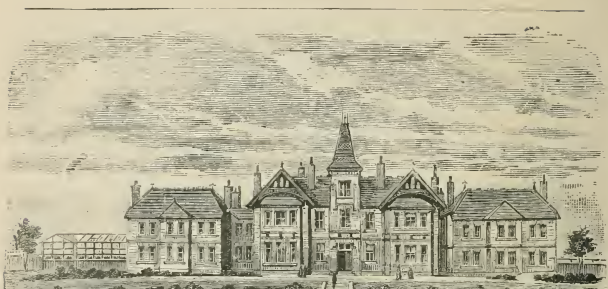
4/- per Pound.

Special terms to Medical men on application to the proprietors—

THE FRENCH HYGIENIC SOCIETY,

LONDON, W.

6, CONDUIT STREET, REGENT STREET.



Shaftesbury House,

FORMBY-BY-THE-SEA,

Near LIVERPOOL.

Private Asylum Licensed for the Treatment of Ladies and Gentlemen mentally afflicted.

Plans approved by Commissioners in Lunacy.—This Asylum has been erected from plans approved by the Commissioners in Lunacy, and in every possible way in accordance with the modern ideas of the treatment of Mental Disease.

The Rooms throughout the building are large, airy, cheerful, light, very brightly furnished, and, as the walls are tinted in various colours, there is a complete absence of anything approaching to dulness or gloom.

Warming, Ventilation, and Drainage.—Each Sitting Room, Dormatory, and Corridor is warmed and ventilated by special means besides the ordinary fireplace, and the drainage is perfect.

Sea Air.—This Asylum, being situated about a mile from the sea, Patients have the benefit of sea air.

Private Rooms.—Private Rooms and special attendants provided whenever required.

Accommodation for Friends.—Friends of patients wishing to be near during treatment can be accommodated.

Grounds and Amusements.—There are about ten acres of ornamentally laid out Pleasure Grounds, which afford ample privacy and room for exercise, Lawn Tennis and other amusements.

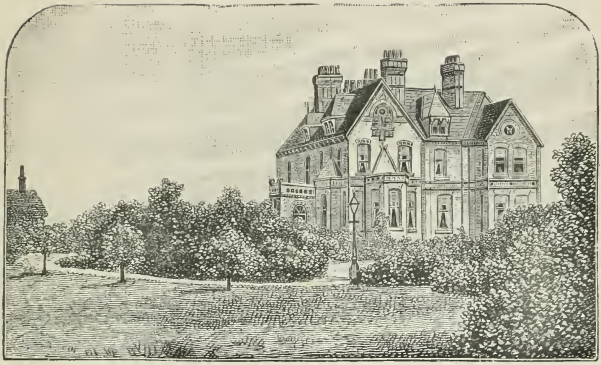
Medical Opinion.—The Asylum has been visited by a large number of medical men in Liverpool and neighbourhood, all of whom have expressed themselves as highly pleased with the arrangements.

Train Service.—Formby Station is about ten minutes' walk distant. Trains runs to and from Formby nearly every half hour to Southport, as also to the Exchange Station, Liverpool, and there is now direct communication with the North, and with London, and the South of England by means of the London and North-Western Railway.

Terms, &c.—Terms and all information can be obtained from

STANLEY A. GILL, B.A., M.R.C.P. Lond.

Resident Physician.



"OVERDALE," PRESTWICH,

Is licensed for the reception of a limited number of patients of both sexes mentally afflicted, of a chronic or harmless character.

Mr. H. B. LOMAS, late of Clifton Hall Asylum, is the Proprietor and Superintendent. Mrs. H. B. LOMAS, Superintendent of the Ladies' Department. *Visiting Physician*—J. HOLMES, M.D. *Consulting Physician*—C. H. BRADDON, M.D.

The House stands elevated, and well in its own grounds—and is specially designed to combine asylum treatment with the privacy and comforts of home—commanding a splendid view of the surrounding country—with Croquet, Tennis ground, and Bowling Green.

"OVERDALE"

has all the characteristics of a comfortable home, and for the patients the best professional skill is provided, the present visiting Physician having had several years' experience as resident physician in a private asylum; and for their comfort, amusement, and literary wants the Proprietor and Proprietress make themselves answerable.

"The house is in proper order, the patients' rooms being comfortably furnished. The appearance as regards cleanliness of person and dress of the patients whom we saw is creditable to those in charge of them. The gentlemen, as well as most of the ladies, walk beyond the grounds . . . Mrs. LOMAS evidently gives her personal attention to the lady patients."—

Commissioners in Lunacy, 17*th September*, 1888.

FOR TERMS APPLY— **MR. LOMAS,**

Overdale, PRESTWICH, near MANCHESTER.

INCORPORATED BY *ROYAL CHARTER.*

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

CHAIRMAN - - - THE VISCOUNT STORMONT.

This Asylum, for PRIVATE PATIENTS only, is beautifully situated in the immediate vicinity of Perth, in the midst of extensive PLEASURE GROUNDS, which are surrounded by the fields of the Home FARM.

The main building has been modernized and enlarged by the addition of TWO WINGS for the reception of acute cases, fitted with most recent improvements in the means of treatment of the Insane, so as to render it an EFFICIENT HOSPITAL as well as a COMFORTABLE HOME.

The MANSION HOUSE of KINCARRATHIE, in the neighbourhood, has been taken on lease; and Houses at the SEASIDE and in the PERTHSHIRE HIGHLANDS are rented annually.

There are ample means of OCCUPATION and AMUSEMENT, and the entire arrangements are of a DOMESTIC CHARACTER.

The RATES OF BOARD vary according to the requirements and circumstances of each case. Those at the Higher Rates have private rooms and special attendance.

The Directors refer the friends of those requiring treatment to the REPORT OF THE COMMISSIONERS IN LUNACY.

DR. URQUHART, *Physician Superintendent.*

BOREATTON PARK.

This Private Asylum, which was Founded by the late Dr. W. H. O. SANKEY, for the reception of a limited number of Ladies and Gentlemen mentally afflicted, is now conducted on the same lines by his son, Dr. H. R. O. SANKEY, late Medical Superintendent of the Warwick County Lunatic Asylum.

THE Mansion stands in its own grounds, handsomely laid out in gardens and terraces, in the middle of an extensive and picturesque Park in which are some 70 head of Deer, and commands a magnificent view of Welsh mountain scenery.

For recreation and exercise are provided Horses and Carriages, Billiards, Tennis Courts, Boats, etc., with the right of fishing for Trout over about five miles of the river Perry.

Arrangements can be made to enable relations of patients to reside with the family, should they desire to do so.

The Asylum is situated about 10 miles from Shrewesbury, and within easy distance from Baschurch Station, G.W. R.

Letters and Telegrams should be addressed to Dr. Sankey, Boreatton Park, Baschurch, Salop.

MAVISBANK HOUSE, NEAR EDINBURGH.

A HOME FOR MENTAL AND NERVOUS INVALIDS OF THE HIGHER AND MIDDLE CLASSES.

Chairman of the Board of Direction—Sir THOMAS CLARK, Bart.,
EX-LORD PROVOST OF EDINBURGH.

Resident Medical Superintendent—JOHN KEAY, M.D.

Mavisbank House is situated in the valley of the Esk, about six miles from Edinburgh, in the beautiful neighbourhood of Roslin. It is well sheltered and secluded, and has a genial southerly exposure. The House stands in a picturesque and well-wooded park of about Sixty acres, and contains large and handsome Drawing and Dining rooms, Conservatory, Billiard-room, Library, and several Private Parlours. It is elegantly and comfortably furnished, and the arrangements are such as preserve the features of a Country Mansion, and render the surroundings of the residents similar to those at their own homes.

The Estate is upwards of 120 acres in extent, with extensive Stabling and Coach-houses, large Flower and Fruit Gardens, Hothouses, and Vineries. The whole of the Grounds, which are quite unrivalled by any Institution of a similar nature, are available for exercise and recreation.

In the treatment of Patients, the open-door system is carried out to the utmost extent possible, and those who are so disposed, and who would be benefited by it, are employed in the Grounds and Gardens.

Communications to be addressed to

Dr. KEAY, Mavisbank House, Polton, Midlothian.

BAILBROOK HOUSE, BATH

For the care and treatment of Ladies and Gentlemen mentally afflicted.

ESTABLISHED 50 YEARS.

Resident Medical Proprietor, LIONEL A. WEATHERLY, M.D., M.R.C.S.

Beautiful Mansion, standing in 30 acres of well-wooded Park, with lovely views of Bath and surrounding scenery. Fifteen minutes' drive from G.W.R. and Midland Stations, Bath.

Horses and Carriages, Billiards, Lawn Tennis, Fishing, Boating, etc.

Great Improvements have been made during past year in house and surroundings. *Vide* Visitors' and Commissioners' Reports.

A NEW WING HAS BEEN ADDED WITH EVERY MODERN IMPROVEMENT.

Terms inclusive from 2½ to 10 guineas per week, according to circumstances of case and accommodation required.

ABINGTON ABBEY RETREAT.

(Near NORTHAMPTON.)

THIS Establishment, instituted some forty-two years since for the Treatment of the Mentally and Nervously Afflicted, of the Upper and Middle Classes, and one of the earliest to adopt the enlightened and humane Treatment, since accepted as the only true method of approaching these sad maladies with the hope, if not of cure, at least of alleviation, still continues its efforts in the same spirit under the general management and control of the late Dr. Prichard's brother, who, thoroughly conversant with the treatment hitherto so successfully adopted, is also assisted by the lady members of the family and efficient Medical advice and care; the object of each being, while quietly exercising all necessary moral and physical supervision, to make the place as home-like as possible—many patients of both sexes, whose condition allows of it, daily associating, and living with the family—an end scarcely attainable under the necessarily inelastic routine of large public Establishments.

The House, within twenty-five minutes' walk of the fine Market-town and its Amusements, and of three Railways communicating with all parts of the Country, is still thoroughly retired in its fine well-wooded surroundings of many acres, with Church adjoining, and with its liberal management and home-like arrangements, will be found a charming refuge for quiet chronic cases.

For Terms and other Particulars, apply to MR. H. S. PRICHARD.

ABBEY GREEN, JEDBURGH.

Established 1871.

Dr. BLAIR receives into his House a select number of Patients suffering from Mental and Nervous Disorders.

Dry Climate. Beautiful District. Terms Moderate.

DOWNSIDE LODGE, CHILCOMPTON,

Near BATH.

This Home (long established) for the Training and Education of Girls of the Upper Classes, who are Mentally Afflicted and unfit for ordinary schools, is under the personal care and superintendence of MISS PAGE, who has had much experience in such cases. References to Medical Men and others.—Terms, &c., on application.

TRAINED MALE NURSES.

THE HAMILTON ASSOCIATION supplies Trained Male Nurses for Medical, Surgical, and Mental Cases in town or country. Terms, from ONE to FOUR Guineas per week, according to the severity of the case and the experience of the nurse supplied. Also skilled Masseurs by week or hour. Last Annual Report, Rules, etc., post free on application to the Medical Superintendent, 57, PARK STREET, GROSVENOR SQUARE, LONDON, W.

WONFORD HOUSE (HOSPITAL FOR THE INSANE),

NEAR EXETER.

A Registered Hospital for the Upper and Middle Classes.

This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter. There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea-air, and a mild and salubrious climate. Private Rooms and Special Attendants provided, if required. Voluntary Patients or "Boarders," not under certificates, also received.

For Terms, &c., apply to P. MAURY DEAS, M.B., M.S.Lond., Resident Medical Superintendent.

TREATMENT OF
IDIOT CHILDREN,

BERRY WOOD ASYLUM, NORTHAMPTON.

There are vacancies in the New Block for Idiot Children. Private Patients, 17s. 6d.; and Pauper Cases, 14s. a week. Also in the Main Building for Adult Lunatics.

Apply to

THE MEDICAL SUPERINTENDENT.

DALRYMPLE HOME,

RICKMANSWORTH, HERTS.

FOR THE TREATMENT OF INEBRIETY.

Licensed under the Inebriates Acts.

GENTLEMEN RECEIVED AS PRIVATE PATIENTS,
AND UNDER THE ACTS.

British Medical Journal:—"Unusually successful in the treatment of Inebriety."

Times:—"A very pleasant house, standing in about five acres of beautiful grounds, admirably adapted to the purpose."

For terms apply to the Resident Medical Superintendent.

NORTHWOODS HOUSE,

WINTERBOURNE, near Bristol.

PRIVATE ASYLUM FOR LADIES AND GENTLEMEN.

Situated in a large park in a healthy and picturesque locality, easily accessible by cab from Bristol, or from Fishponds, Yate, or Patchway Stations.

The Building is FIREPROOF.—For further information, see London Medical Directory, pp. 1711, and for Terms, &c., apply to Dr. Eager, Resident Physician.

BISHOPSTONE HOUSE,

BEDFORD.

(Licensed to receive Ten Ladies.)

Combines the comfort and individual attention of a superior home with the efficiency of a Modern Asylum. Lady Companion. Private Carriage. Terms moderate and inclusive.

WILLIAM SIMPSON CRAIG, M.D.,
MEDICAL PROPRIETOR.

ONE HOUR BY RAIL FROM ST. PANCRAS.

HARPENDEN HALL,

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A private Asylum for Ladies of the Upper and Middle Classes. This Establishment is well adapted for the classification of cases. The rooms are large and cheerful. Private Suites of Apartments and separate attendance can be given if desired. It is delightfully situated in one of the most beautiful parts of the country. There is a large Common extending to the gates. Carriage exercise, lawn tennis, and every amusement is provided, the object of the Proprietor being to make the place as home-like and as free from the appearance of restraint as possible. It is four miles from St. Albans and twenty-five from London, on the Midland Railway.

TERMS—from Two Guineas a Week.

Apply to A. MacLEAN, *Proprietor and Medical Superintendent.*

THE GOVERNORS OF
THE
ROYAL HOSPITAL OF BETHLEHEM

Are prepared to receive a limited number of Male and Female Patients at Two Guineas a week.

All particulars may be obtained from the Resident Physician or the Steward at the Hospital.

SAINT GEORGE'S ROAD,
LONDON, S.E.

TUE BROOK VILLA,
Near LIVERPOOL.

PRIVATE ASYLUM FOR THE CARE AND TREATMENT OF THE VARIOUS FORMS OF MENTAL INFIRMITY OCCURRING IN LADIES AND GENTLEMEN.

This well-known Establishment has, during the last two years, undergone complete renovation, and the House is now fitted up and furnished in the most approved modern style.

The extensive Grounds, too, have had additional plantations and lawns laid down.

Amusements of all kinds provided for the Patients. The gentlemen when able are encouraged to employ themselves in light garden work, much to their benefit, mentally and physically.

Terms, &c., on application to the Resident Superintendent,

B. HALL, M.B., Lond., M.R.C.S.

YORK LUNATIC ASYLUM.

The Governors of this Institution, which is capable of accommodating about 200 Patients, having expended a large sum of money in extensive alterations and improvements, which include the erection of billiard room, American bowling-alley, recreation and dining hall, in addition to spacious and well-ventilated sitting and bedrooms for first-class patients, lofty corridors for in-door exercise, and numerous and healthy sitting and bedrooms for associated patients, now offer superior accommodation for the reception of lady and gentlemen patients. The Asylum is efficiently heated by steam, has ample recreation grounds, gardens, etc., and is pleasantly situated in the suburbs of the City of York. In addition to the resident Medical Superintendent a Consulting Physician regularly visits the patients.

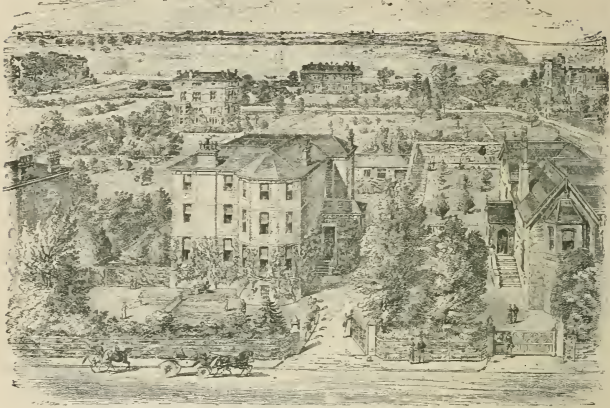
TERMS, including carriage exercise, from Two Guineas per week.

There are vacancies for patients at a lower scale according to circumstances.

Information as to terms, etc., may be obtained on application to

DR. HITCHCOCK, *Resident Medical Superintendent.*

HOME TREATMENT OF THE DRINK-CRAVE.



"DUNMURRY," SNEYD PARK, NEAR CLIFTON.

GLOUCESTERSHIRE.

Established 1876. Not Licensed under the Act.

A beautifully situated detached private residence, devoid of any features marking it as different from the other houses in Sneyd Park, which is a district on the Bristol Channel side of "The Downs"—a common of 430 acres (250 feet above the sea-level). Separated from Clifton proper by the whole breadth of these bracing Downs, Sneyd Park is reserved entirely for houses occupied by the wealthier classes. THERE IS NOT WITHIN A MILE OF DUNMURRY A SINGLE PLACE WHERE ANY ALCOHOLIC DRINK CAN BE PURCHASED. None is ever allowed into the house under any circumstances whatsoever. Clifton Down is three hours' rail from Paddington.

Dr. and Mrs. JAMES STEWART are both total abstainers. They receive as *voluntary* boarders in their family a few ladies and gentlemen of good social position—the total number never exceeding six—who are desirous of being cured of Inebriety. Not engaging in private practice, Dr. S. is able to devote his whole time to their treatment and personal supervision. The system adopted at Dunmurry is sketched in Dr. STEWART'S pamphlet on "Treatment of Inebriety in the Higher and Educated Classes." (London: H. K. Lewis.) No "nervous" cases are received. Highest medical references in London and the Provinces can be given.

Postal Address as above. *Telegraphic Address*: "DUNMURRY, Rockleaze, Bristol"

NORTH GROVE, HAWKHURST, KENT,

Between Tunbridge Wells and Hastings.

A Quiet and Comfortable Home for the care and treatment of nervous Invalids.

Proprietors—Dr. W. M. and Mrs. S. L. HARMER.

THE CALLANDER AND TROSSACHS HYDROPATHIC,

CALLANDER.

This Magnificent Establishment is situated in the centre of the Loch District of Scotland, about one mile from Callander on the road to the far-famed Trossachs. Splendid Mountain Scenery. New RECREATION HALL.

Accommodation for over 100 Visitors. Special Coach Excursions each day to different Places of Interest in the Neighbourhood.

Terms ... ... from £2 12s. 6d. per week.

Table d'Hôte Dinner, 6.30. 'Bus awaits all the trains.
SPLENDID NEW LAWN TENNIS COURTS.

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DR. RAYNER'S **HYDROPATHIC** ESTABLISHMENT.

Hydropathy, Electricity, Massage, Medicated Baths and other curative agents. Hot air, Russian vapour, and Droitwich Brine Baths. Weir-Mitchell treatment. Pumilio Pine Baths and Inhalations.

Massage Bath (Massage combined with warm douches and sprays), as at Aix-les-Bains, for rheumatism, gout, neuralgia, &c.

Separate terms to visitors not requiring medical treatment.

For prospectus apply to
T. RAYNER, M.D., Malvern.

TUNBRIDGE WELLS, THE SPA,

HYDRO-THERAPEUTIC INSTITUTION

AND

SANATORIUM FOR INVALIDS AND VISITORS.

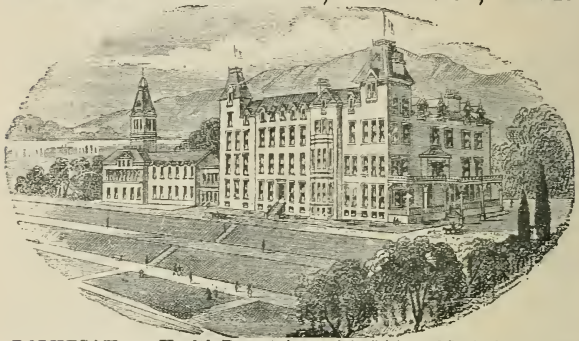
Beautifully situated on sandy soil, in its own grounds of sixty acres. TURKISH, VAPOUR, KREUTZNACH, BRINE, MEDICATED, ELECTRIC, and all forms of BATHS, DOUCHES, and HYDRO-THERAPEUTIC APPLICATIONS. Trained MASSEURS and MASSEUSES for MASSAGE treatment. Under direct medical supervision.

All the Baths, &c., have been fitted with every modern scientific improvement. The whole Establishment is warmed throughout during winter months.

For Terms and Prospectus, apply to the Secretary.

SCOTLAND.

GLENBURN HYDROPATHIC, ROTHESAY, BUTE.



ROTHESAY as a Health Resort, is termed the Brighton of Scotland. Glenburn is a delightful residence protected from east winds.

An additional Drawing Room with a southern aspect, overlooking the Flower Garden, with over 20 new Bedrooms, and Nursery for Children; large handsome Recreation Hall, Music and Billiard Room, Lawn and Ash Tennis Court, Bowling, Boating.

THE BATHS, Turkish, Vapour, Salt, Russian, Medicated, Electric & Swimming, finest in Britain.

Under the direction of Mr. PHELP, Proprietor of the Cockburn Hotels, Edinburgh and Glasgow.

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Resident Physician.

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PRIVATE ASYLUM for LADIES,

COURSE LODGE, RICHHILL, COUNTY ARMAGH.

Visiting Physician—H. FRAZER, M.D., ARMAGH.
Consulting Physician—R. GRAY, ARMAGH.

This old establishment is in a retired and healthy situation, about four miles from the city of Armagh. Its unrivalled position, with gardens and pleasure grounds attached, and its domestic comforts, render it equal to any Institution of its sort in the Kingdom.

The patients are under the immediate supervision of the Misses ORR and the family, and partake of all the enjoyments of a respectable home.

Terms Moderate. Application to the Resident Proprietors—

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VERNON HOUSE ASYLUM.

BRITON-FERRY, GLAMORGANSHIRE.

A Private Establishment for the Cure and Treatment of Persons Mentally Afflicted.

TERMS FROM TWO GUINEAS PER WEEK.

Full particulars may be obtained from CHARLES PEGGE, Proprietor and Medical Superintendent.

DEESIDE HYDROPATHIC ESTABLISHMENT,

HEATHCOT, near ABERDEEN.

The climate of Deeside is the most healthy and bracing in Great Britain. Residents in this Establishment have the privilege of preserved Salmon and Trout Fishing in the River Dee, free, as it runs through the Estates of Heathcot and Ardoe, a distance of two miles.

The Turkish and other Baths are constructed with all the latest improvements necessary for the practice of Hydropathy.

Terms per week, £2 10s.; for two having same bedroom, £2 5s. each. From 1st November to 30th April, £1 15s.

For particulars apply to Dr. STEWART, Medical Superintendent, Heathcot, near Aberdeen.

COMFORT IN SICKNESS
AND
GREAT HELP IN NURSING.

BEST'S PATENT INVALID LIFT
AND FRACTURE BED.

PATENT PORTABLE FRACTURE APPARATUS for Upper & Lower Extremities, for Military, Ambulance, & Country Practices.

ISAAC A. BEST & SON,
Surgical Mechanists

TO THE GENERAL, THE CHILDREN'S, AND OTHER HOSPITALS,

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ST. ANN'S HILL HYDROPATHIC ESTABLISHMENT,

BLARNEY, COUNTY CORK.

Resident Physician: M. ALTDORFER, M.D.

ESTABLISHED 1843.

CELEBRATED HEALTH RESORT, picturesquely situated on rising ground (sandy soil) and commanding a view of the far-famed Groves and Castle of Blarney. The woods and Grounds attached comprise over 600 acres, whilst there are several miles of wooded and sheltered walks in the neighbourhood.

All forms of Hydro and Electro-Therapeutic Applications; Massage and Medical Gymnastics. Turkish, Pine, Brine, Electric and other Baths.

Winters remarkably mild and even, House comfortably heated, Drawing, Reading and Billiard Rooms, Tennis.

Terms 2 Guineas to 3 Guineas per week. 10 *per cent. discount allowed to Medical Men and their Families.*

Prospectus from the Secretary, St. Ann's Hill, County Cork.

SMEDLEY'S HYDROPATHIC ESTABLISHMENT,

MATLOCK BRIDGE, DERBYSHIRE.

Physicians:—WILLIAM B. HUNLER, M.D., &c.,
C. J. WHITBY, M.B. Cantab, &c., *Resident.*

TURKISH and RUSSIAN BATHS specially adapted in ventilation and otherwise to the requirements of Invalids. General Bath Houses completely reconstructed, Bedroom accommodation greatly increased, and considerable improvements in the offices, public-room accommodation, grounds, and the general management.

As a WINTER RESIDENCE this place is specially adapted for sufferers from chest and digestive disorders, rheumatism, and gout, affording warm and well-ventilated Public Rooms, Bedrooms, Corridors, covered Balconies, permitting open air exercise in all weathers; a large Billiard Room with two tables, and a Smoking Room. Hydraulic passenger hoist to the bedroom flights. The Public Rooms and Corridors lighted throughout by electric light. The numbers during the Winter Months rarely fall below 130.

For full particulars see the Prospectus, to be had on application to

THE MANAGER.

THE HALL, BUSHEY, HERTS.

(16 Miles from Euston).

ROBT. J. BANNING, M.D., Resident Physician.

This magnificent Mansion, with grounds extending to 120 acres, is a most charming residence at all seasons of the year.

Special care and attention to Invalids. Dipsomaniac or Mental cases not received.

Complete system of Hydropathic Baths. Turkish, Swimming and ordinary baths free to all residents. Excellent Cuisine. Good Stabling. Electric Light in principal rooms. Telegraph Office on premises. APPLY TO MANAGER.

Telegraphic Address—"HYDRO, WATFORD."

THE

HAMMAM OR TURKISH BATH,

76, JERMYN STREET, S.W.

(FOUNDED 1862.)

Total Number of Bathers to 31st Oct. 1889, 936,410.

The Bath is open daily from 7 a.m. to 9 p.m.; on Sunday from 9 a.m. to 3 p.m. (Entrance by Side Door.)

TERMS OF ADMISSION.

ANNUAL TICKET -			£8 8s.
7 a.m. to 7 p.m. -	Single Ticket - - - - -		4s.
	Twelve Tickets (3/- each)	- -	36s.
After 7 p.m. -	Single Ticket	- - - -	2s.
	Twelve Tickets	- - - -	£1

Members of the Medical Profession (on presenting their card) can obtain Medical Tickets at the Reduced rate of 2s., or twelve tickets for £1.

NO TICKETS ISSUED AFTER 8 p.m. BATH CLOSES AT 9 p.m.

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Breakfast and Luncheons are served according to a fixed tariff. Oriental dishes are supplied. Coffee, Chocolate, Sherbet, Tobacco, and Light Wines are also sold during the hours the bath is open.

The Hair Dressing Gallery is held by PENHALIGOM & JEAVONS, the celebrated Hair Cutters and Perfumers.

Messrs. GREGORY & MACKINTOSH, Chiropodists, of 132a Regent Street, have, for the convenience of Bathers, a private room in the Bath, where they are in attendance daily.

THOS. CHRISTY & CO.,
25, LIME STREET, LONDON.

CHRISTIA,

The new Surgical Tissue, is fast superseding oiled silk, guttapercha, and similar materials in hospital and private practice. Its advantages are that neither heat, water, alcohol, chloroform, nor ammonia will effect it, while it can be medicated or rendered antiseptic at the desire of the surgeon. The sheeting is put up in boxes of one yard square for ordinary use; in the form of bandages, 2½, 3, and 3½ inches in width; in the form of christiated lint, chest protectors, poultice bags, proofed silk, &c. Samples and circulars on application.

EUPHORBIA PILULIFERA

Has become well established in the treatment of INFLUENZA, Coughs, Asthma, Bronchitis, and other Diseases of the Respiratory Organs. In order to make the Fluid Extract pleasant to the patient, we are offering a Liquor Aromaticus, which is given in one-drachm doses, also the Lozenges, each containing the equivalent of the minimum dose of the fluid extract. Both these preparations are well worth a trial, and we shall be pleased to forward samples to any medical man.

PICHI.

The Fluid Extract, prepared from the *leafy, resinous* tops of the plant, has been satisfactorily tested in Inflammation of the Urethra, Cystitis, Sciatica, and Vesical Tenesmus. The fact that some two to three thousand pounds weight of the drug are imported by us every year will perhaps give a better idea of the extent of its use than any reports of cases. The Fluid Extract, of a strength of 1 in 1, is the best preparation to prescribe, in doses of 15 to 30 drops. Full particulars on application.

PAPAINE AND COCAINE LOZENGES.

Containing one-eighth of a grain of each ingredient per lozenge. Soothing and cleansing in Ulcerations, Catarrhs, and Irritability of the Mouth, Tongue, and Throat; also in Ulcerations of the Stomach. Sold at 1/- per ounce.

MENTHOL INHALERS.

By means of Cushman's Inhaler the highly soothing and antiseptic properties of Menthol are administered in a simple and pleasing manner, while the style of the article is proclaimed the most elegant and simple. Cushman's Inhaler is the best medium for the administration of Menthol in Colds, Coughs, INFLUENZAS, Catarrhs, Asthma, Hay Fever, &c. Each Inhaler charged with Menthol, the supply of which will last about twelve months, is sent post free for 2s. Recommended by the Profession for the Influenza Epidemic.

OUABAINE.

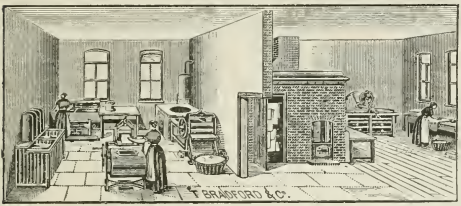
It has been suggested that Ouabaine would prove useful in Asthma, Pertussis, and Heart Disease (see MEDICAL ANNUAL, 1889, p. 56), and on this subject we have the following important communication from Prof. E. GLEY:—

"I do not know of the use of Ouabaine in Asthma and Pertussis, but from my physiological experience it might prove to act favourably in Asthma. I have, however, no practical experience. With regard to the dose for an adult for internal administration, it should not exceed one milligramme (0.015 of a grain) in the twenty-four hours, *given in doses of one-fifth of a milligramme in 20 grammes of water*, or in pills containing the same quantity of Ouabaine—*i.e.*, one-fifth of a milligramme (0·003 of a grain). The solution or the pill may be given four times a day, but do not exceed that dose. Also, I strongly advise that only the active principle, such as was prepared and described by my friend Mr. Arnaud, should be used, as with it definite and reliable results are obtained. I would not encourage the use of a tincture from the raw material, which must necessarily vary in its yield of this toxic principle. I consider, as a result of my physiological research, its action on the heart to be analogous to that of Strophanthin. Those two bodies form part of the group of heart poisons, which in a general way act like Digitaline. I have, as you ask me the question, found that Ouabaine has an anæsthetic action on the eye, and on this point you will receive shortly my paper, which will be published here."

GOLD MEDAL and SILVER MEDAL, PARIS, 1889.

THOMAS BRADFORD & Co., Laundry & Dairy Engineers.

DOMESTIC AND HAND-POWER LAUNDRIES.

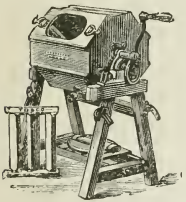


Estimates and Details furnished for the complete equipment of Hand-power Laundries, including improved Drying and Airing Apparatus suitable for Family Mansions, Schools, Hotels, Workhouses, &c.

STEAM LAUNDRIES.

Complete Outfits of Machinery and Apparatus, including Steam Boilers, Patent "Vowel" Washing Machinery, Drying Apparatus, Patent Calenders, Ironing and Finishing Machines, as designed for the special requirements and work to be done in Lunatic Asylums, General and Fever Hospitals, Workhouses, Public Schools, &c.

BRADFORD'S PATENT "DIAPHRAGM" CHURNS.



No newly patented churn ever met with so much opposition upon its introduction, or ever so completely overcame it.

No churn was ever so much liked by those who use it, because it never fails to make good butter. We respectfully advise everyone to try it with *any other* churn.

"The best churn in the world."—Professor CANTONI, *Times*, May 21, 1888.

At the R.A.S. Show at Windsor, 1889, this churn obtained four Prizes, and at the London Dairy Show, 1889, it also obtained four Prizes—a success unprecedented.

STEAM POWER CHURNS.

The "DIAPHRAGM" CHURN for 60 Gallons. | The "ANGLO HIBERNIAN" for 150 Gals.
The "CHARLEMONT DIAPHRAGM" for 100 Gals. | The "HIBERNIA" for 200 Gallons.

Complete Illustrated Catalogue, Free by Post, upon application.

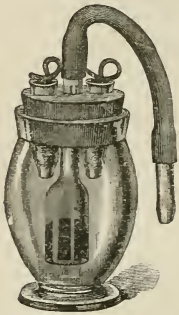
THOMAS BRADFORD & CO.,

140 TO 143, HIGH HOLBORN, LONDON. | CRESCENT IRON WORKS, SALFORD.
130, BOLD STREET - LIVERPOOL. | VICTORIA AVENUE - MANCHESTER.

GODFREY'S

NEW PATENT

CHLORIDE OF AMMONIUM INHALER.



CATARRHAL, THROAT & EAR AFFECTIONS; LOSS OF VOICE, BRONCHIAL ASTHMA, and HAY FEVER.

AWARDED SILVER MEDAL, BRUSSELS EXHIBITION, 1888.

YIELDS a plentiful cloud of Neutral Vapour with little effort on the part of the patient.

Simple and portable. Contains no water.

Illustrated Prospectus, with the "History of Chloride of Ammonium as a remedial agent," free by post.

Retail, 7s. 6d.—*Medical Profession*, 5*s*.—*Post*, 6*d. extra*.

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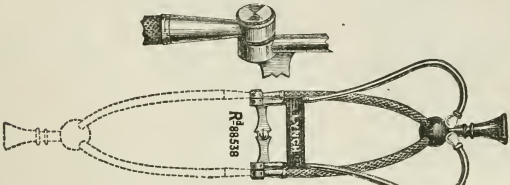
LYNCH & Co LONDON. TRADE MARK.

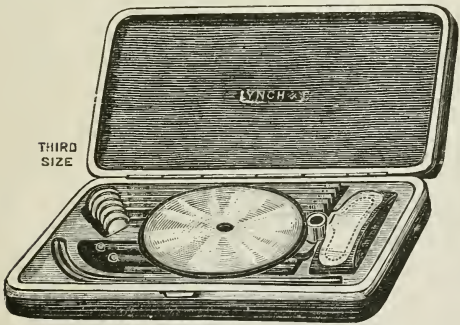
LYNCH'S
REGISTERED
BINAURAL STETHOSCOPE.

SMALL, 15/- EACH.



LARGE, 21/- EACH.

The "LANCET" says:—"This is undoubtedly an excellent Binaural Stethoscope; its construction is simple, and is cleverly designed to obviate a disadvantage which experience has found to attend the employment of similar instruments. In the case of Stethoscopes in ordinary use, the elastic tubing soon becomes damaged by being rapidly doubled up to be placed in the pocket or bag. In the instrument under notice this disadvantage is overcome by the provision of a joint with a hollow screw, by which the convenient portability of the Stethoscope is at the same time somewhat increased, and that without any detriment to its acoustic properties. We have given the instrument a careful trial, and have no hesitation in recommending it as a very serviceable Binaural Stethoscope."



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LARYNGOSCOPE, 3 in. Head Mirror, with Improved Headband, 6 Throat Mirrors, 3 Handles, Probe, Brush Holder and Brushes, in handsome leather case, metal framed.

Complete, 30/-

VARIOUS PATTERNS KEPT IN STOCK.

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Our Illustrated Catalogue will be forwarded free on Receipt of Application.

All Instruments at our Revised "Low Prices."

LYNCH & Co. [Wholesale and Retail Dealers in, Manufacturers & Importers of Surgical Instruments] **192, Aldersgate St. London.**

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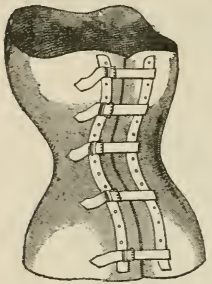
PORO-PLASTIC JACKETS AND SPLINTS.



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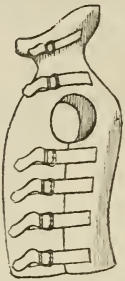

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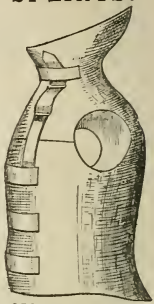
Designed by
W. J. WALSHAM, F.R.C.S.



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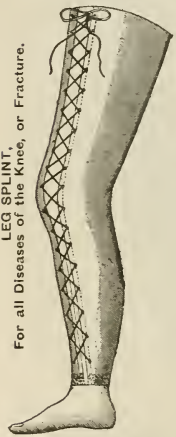

LEG SPLINT,
For all Diseases of the Knee, or Fracture.

Made with soft front or with hinge at back, and foot part if required.

Instructions for Measurement, &c.

JACKET.

(In cases of Slight Deformity):—

Circumference at axilla.
" waist.
" hips.
Length from axilla to great trochanter.

In severe angular cases, circumference over apex of curve, position of same, and contour should be given; in lateral cases a description of the case.

In all cases it must be stated if for male or female.

CERVICAL JACKETS.

Same measurements and circumference at neck, and length from centre of neck to axilla.

Any part of the Jacket can in the process of manufacture be left soft.

LEG SPLINT.

Circumference at top of thigh.
" above knee.
" at knee.
" below knee.
" at calf.
" at ankle.
Length of splint as required.

State if for right or left leg.

When the foot part is required, also circumference at heel and instep, and length from centre of knee to ground.

If the limb is contracted the contour should be given.

A Full List of Splints and Poro-Plastic in Sheets may be had on application.

Sole Manufacturer: **J. T. COCKING, PLYMOUTH.**

PROPRIETOR, LEOPOLD HOFF.

Always Prescribe the HAMBURG

FOR INVALIDS CONSUMPTIVES DYSPEPTICS & ALL CHEST DISEASES

THE OLD, THE GENUINE, THE ORIGINAL ARTICLE
INTRODUCED IN GREAT BRITAIN 1863.

HOFF'S MALT EXTRACT

Prof. von NIEMEYER, in his lectures on Pulmonary Consumption, writes:—

"Cod Liver Oil I esteem very highly, but it can be completely replaced by the much less nauseous, and, for the stomach, less troublesome MALT EXTRACT, which instead of fat, contains fat-forming substances, in a form very easily assimilated."

"We are able to speak well of it, and the patient is sure to get a good article."—*Medical Times and Gazette.*

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"The HAMBURG Hoff's Malt Extract Beverage of Health is aiding the digestion and of great value in WASTING DISEASES and CHRONIC DYSPEPSIA, &c."—*Liverpool Med. Chir. Journal.*

"The highest commendations may be awarded to it."—*Medical Press and Circular.*

From the Medical Press and Circular, September 7th, 1887.

"Farinaceous matters are insoluble, and only load the alimentary canal and aggravate the patients' sufferings. What then must the patient have? What fuel is it which feels the lamp of life? Grape sugar! Soluble carbohydrates which will readily pass through the wall of the alimentary canal, and are independent of the action of the digestive ferments; these are the food of persons in Fever. Herr Hoff with his malt extract—that man has been the pioneer in this matter of soluble carbo-hydrates for delicate children, for invalids, and, as we now see, for persons acutely sick, and especially with a high temperature."

Samples may be had free of charge by applying to this address.

ALWAYS PRESCRIBE THE **HAMBURG HOFF'S.**

SPECIAL NOTICE.—At the Medical Congress in Dublin. more than 500 Physicians certified to the efficacy of HOFF'S MALT EXTRACT in the case of Chronic Dyspepsia, Consumption, Anæmia, Chlorosis, etc.

M. HOFF'S London House, 29 New Bridge Street, E.C.

PERRY'S SKIN SOAP.

A Superfatty Soap containing No Free Alkali, Resin, or other ingredient harmful to the Skin.

PURE—UNIRRITATING—PROTECTIVE.

THIS Soap, first brought under the notice of the Profession in 1837, has been in increasing demand since that time, and is now extensively recommended by Practitioners.

Ordinary Soaps containing, as they frequently do, an excess of alkali and other irritating ingredients, are absolutely inadmissible for delicate skins; and even NEUTRAL soaps, when constantly used, by removing too completely the natural oiliness of the skin, have a tendency to make it rough, dry, and inelastic.

Unlike these, Perry's *superfatty* Soap is pure, emollient and protective, and can be used with safety and advantage where soap may be employed at all.

For delicate and sensitive skins, for roughness, dryness, and irritability of the skin, and for many forms of skin affection, this Soap has proved itself of much service. For general Toilet and Nursery use a better soap cannot be obtained.

Dr. SIMON, in speaking of the Local Treatment of Eczema, says of this soap:—

"It will, I think, prove of great value to people predisposed to Eczema, and to those whose skins are dry and harsh, owing to a deficiency of fat. . . . Ordinary Soap is most objectionable in Eczema, and its use ought to be interdicted amongst all who have a tendency thereto. . . . This Soap will minimise the evils of washing in cases of Eczema, and to that extent will prove useful; but it is rather in the prevention than in the cure of Eczema that its very great value lies."—*(Lectures on the Treatment of the Common Diseases of the Skin, by ROBERT M. SIMON, M.A., M.D. Cantab, M.R.C.P. London, Senior Assistant Physician to the General Hospital, Birmingham.)*

Birchfield, Birmingham,
May 7th, 1888.

"I have no hesitation in adding my testimony to the value of your Soap in the treatment of skin disease. I have found it of especial service in cases of delicate skin with a tendency to Chronic Eczema, and in other conditions which are aggravated by the use of ordinary soaps. In several such cases lately under my care it has either lessened the liability to recurrence, or entirely prevented it."

WM. LEAH, B.A. Oxon.; M.D., T.C.D.
Burnley,
October 26th, 1888.

"The PERRY'S SKIN SOAP I have examined is an overfatty soap, and as such is unctuous and soothing, and an excellent external antidote in cases of irritability of the skin. I have much faith in it for Eczema and for all delicate skins—especially for infants.

J. W. WATTERSON, M.B., C.M., University of Edinburgh.

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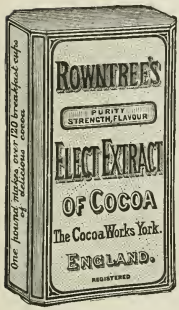

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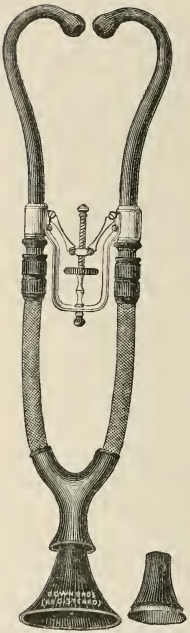

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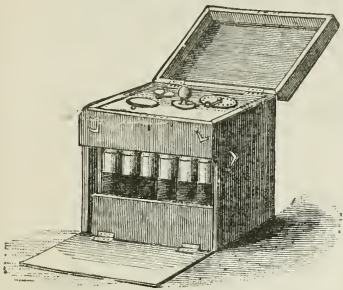

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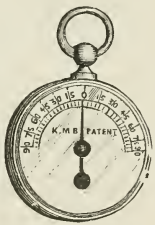

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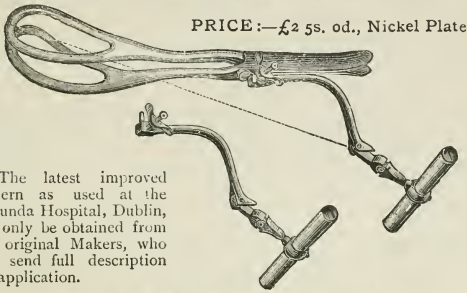

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